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The present invention describes polypeptides or their fragments, which are expressed during the latent stage of a mycobacterial infection, and/or nucleic acids encoding the polypeptides, which are us~ul for creating a therapeutic vaccine against tuberculosis. Also de\_cribed: (1) a therapeutic vaccine against tuberculosis comprising one or more polypeptides; (2) a method for treating an animal, including a human being, with tuberculosis caused by virulent mycobacteria, e.g. by Mycobacterium tuberculosis, M. africanum or M. bovis; (3) a method for

mmunising an animal, including a human being, against tuberculosis

Use of one or more polypeptides or their fragments, which are expressed during the latent stage of the mycobacterial infection, and/or nucleic acids encoding the polypeptides, for a therapeutic vaccine against tuberculosis.

Claim 3; SEQ ID NO 21; 76pp; English.

| 45                 | 44                 | 43                 | 42                 | 41                 | 40                 | 39                 | 38                 | 37                 | 36                | 35                 | 34                 | 33                 | 32                 | 31                 | 30                 | 29                 | 28       | 27                 | 26                 | 25                 |
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| AAR35205           | ADZ51727           | AEB86793           | AEB86996           | ADQ91704           | ADY80055           | AAE10145           | ABG99868           | ADV99897           | ABB48055          | ADI23927           | ADY80057           | AB063304           | ABU18053           | ABG99878           | ABG99879           | AAE36119           | AAB82212 | ADY26642           | ABO78505           | ADN26185           |
| Aar35205 Lipase #2 | Adz51727 PKS FscC, | Aeb86793 Streptomy | Aeb86996 Streptomy | Adq91704 Polyketid | Ady80055 Amino aci | Aae10145 Streptomy | Abg99868 S. cinnam | Adv99897 Nanchangm | Abb48055 Listeria | Adi23927 Streptomy | Ady80057 Amino aci | Abo63304 Klebsiell | Abu18053 Protein e | Abg99878 S. cinnam | Abg99879 S. cinnam | Aae36119 Streptomy | •••      | Ady26642 Streptomy | Abo78505 Pseudomon | Adn26185 Bacterial |

### ALIGNMENTS

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N-PSDB; ADI37345.
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis caused by virulent mycobacteria in an animal, including a human being; (5) a method for diagnosing previous or ongoing infection with a virulent mycobacterium; and (6) a method of diagnosing Mycobacterium tuberculosis infection in a subject. The polypeptides have antibacterial activities, and can be used in vaccines and in gene therapy. The polypeptides are useful for the manufacture of a therapeutic vaccine for treating an individual who is infected by a virulent mycobacterium, e.g. M. tuberculosis, and who is not vaccinated with BCG against tuberculosis. The present sequence represents a low oxygen induced antigen, which is used in the exemplification of the present invention.
Use of one or more polypeptides or their fragments, which are expressed during the latent stage of the mycobacterial infection, and/or nucleic acids encoding the polypeptides, for a therapeutic vaccine against
                                                              WPI; 2004-122778/12.
N-PSDB; ADI37366.
                                                                                                                                                                                                                                                                                                                           mycobacterial infection; vaccine; tuberculosis; Mycobacterium tuberculosis; immunisation; antib low oxygen induced antigen.
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The present invention describes polypeptides or their fragments, which care expressed during the latent stage of a mycobacterial infection, cand/or nucleic acids encoding the polypeptides, which are useful for creating a therapeutic vaccine against tuberculosis. Also described: (1) a therapeutic vaccine against tuberculosis. Also described: (2) a therapeutic vaccine against tuberculosis comprising one or more polypeptides; (2) a method for treating an animal, including a human being, with tuberculosis caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis (5) a method for diagnosing previous or ongoing infection with a virulent mycobacterium; and (6) a method of diagnosing Mycobacterium tuberculosis infection in a subject. The polypeptides have antibacterial activities, cand can be used in vaccines and in gene therapy. The polypeptides are cuseful for the manufacture of a therapeutic vaccine for treating an cindividual who is infected by a virulent mycobacterium, e.g. M. cuseful for the manufacture of a therapeutic vaccine for treating an conditional sequence represents a low oxygen induced antigen, which is used in the exemplification of the present invention.
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B Ś 밁 S 밁 S 밁 δ 밁 S Matches Local Similarity mes 111; Conserv 173 179 118 121 9 61 -LAAAENAVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAAALVÇVGAIGVHHFRPE 120 LAGIGRSVHMVVLSASDQEHVEQLVGA -- PGNAVL GVPLRAVAVH----AAETPDDVEQGSRLAHVHLSRRLAHWTRLYPEVRVDRAIAGGSACRH DSPVRVVTCRQSGVGDTGDDV-----RASLDRWLARWQPRYPDVRVQSAAVHGELLDY R-GSVAATLAGSALCPVAVIHPSPAEPATTSQVSAVVAEVDN----GVVLRHAFEEARLR RVGSTAAALALSAQCPVAIVRPH--RVPIGRDAAWIVVEADGSSDIGVLLGAVMAEARLR 178 -SÄÄRAÄLHDÄSRKVEÄTGQPVKIETEVLCGRPLTKLMQESRSÄAMLCVGSVGLDHVRGR 117 MSDPRPARAVVVGIDGSRAATHAALWAVDEAVNRDIPLRLVYVIDPSQLSAAGEGGGQ--LAANAKPGQLFV---ADSHSAHELCGAYQPGCAVL Conservative 30.6%; Score 431.5; DB 8; 40.4%; Pred. No. 4.3e-36; tive 34; Mismatches 105; 261 264 Indels 25; Gaps 231 172 58 8

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                                                                       Mycobacterium tuberculosis
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                     22-APR-2004
                                                         ADI37298;
                                                                                               ADI37298 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 3; SEQ ID NO 27; 76pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Andersen P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13-JUL-2002; 2002DK-00001098.
                                                                                                                                                                                             245
                                                                                                                                                                                                                                                                                                                                                                                                                             83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11 TIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTHPSPDDYD---RDLAHAERSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
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                                                                                                                                                                                                                                                                                                                                               LAEKAHCPVAVMRSKVDQPASDINWIVVRMTDAPDNEAVLEYAAREAKLRQAPILALGGR
                                                                                                                                                                                                                                                                                                                                                                         LALSAQCPVAIVRPHRVPIGRDAAWIVVEADGSSDIGVLLGAVMAEARLRDSPVRVVTCR
                                                                                                                                                                                                                                                                                                                                                                                                                           REAQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGRYASSILGSTATE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEPDDPGYAAHGAAARKLAAAENAV
                                                                                                                                                                                             AGQLARLVGPSGHPVFRHAECSVLVV
                                                                                                                                                                                                                                 QEHVEQLVGAPGNAVLQEAGCTLLVV 274
                                                                                                                                                                                                                                                                       PEELREIPD----GEFERRVQDWHHRHPDVRVYPITTHTGIARFLADHDERVQLAVIGGGE
                                                                                                                                                                                                                                                                                                         QSGVGDTGDDVRASLDRWLARWQPRYPDVRVQSAAVHGELLDYLAGLGRSVHMVVLSASD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   invention describes polypeptides or their fragments, ed during the latent stage of a mycobacterial infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA,
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                 (first entry)
                                                                                             protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29.5%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; Score 416; DB 8;
; Pred. No. 1.8e-34;
46; Mismatches 116
                                                                                               295
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                                                                                                                                                                                             270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 272;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present invention describes polypeptides or their fragments, which CC are expressed during the latent stage of a mycobacterial infection, CC and/or nucleic acids encoding the polypeptides, which are useful for CC creating a therapeutic vaccine against tuberculosis. Also described: (1) ca therapeutic vaccine against tuberculosis comprising one or more CC polypeptides; (2) a method for treating an animal, including a human being, with tuberculosis caused by virulent mycobacteria, e.g. by CC Mycobacterium tuberculosis, M. africanum or M. bovis; (3) a method for CC caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis CC caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis CC caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis CC (5) a method for diagnosing previous or ongoing infection with a virulent mycobacterium; and (6) a method of diagnosing Mycobacterium tuberculosis cinfection in a subject. The polypeptides have antibacterial activities, CC and can be used in vaccines and in gene therapy. The polypeptides are CC useful for the manufacture of a therapeutic vaccine for treating an CC useful for the manufacture of a therapeutic vaccine for treating an CC useful for the manufacture of a therapeutic vaccine for treating an CC useful for the manufacture of a therapeutic vaccine for treating an CC useful for the manufacture of a therapeutic vaccine for treating an CC useful for the manufacture of a therapeutic vaccine for treating an CC useful for the manufacture of a therapeutic vaccine for treating an CC useful for the manufacture of a therapeutic vaccine for treating an CC useful for the manufacture of a therapeutic vaccine for treating an CC useful for the manufacture of a therapeutic vaccine for treating an CC useful for the manufacture of a therapeutic vaccine for treating an CC useful for the manufacture of a therapeutic vaccine for treating an CC useful for the present sequence represents a low oxygen induced antigen, which is used in the exem
                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Use of one or more polypeptides or their fragments, which are expressed during the latent stage of the mycobacterial infection, and/or nucleic acids encoding the polypeptides, for a therapeutic vaccine against
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mycobacterial infection; vaccine; Mycobacterium tuberculosis; immun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              M. tuberculosis low oxygen induced antigen Rv2005c SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13-JUL-2002; 2002DK-00001098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          08-JUL-2003; 2003WO-DK000477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO2004006952-A2.
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                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            oxygen induced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2004-122778/12
                                                                                                                                             103 AAALVCVGAIGVHHFRPERVGSTAAALALSAQCPVAIVR-----PHRVP--IGRDAA
                                                                                                                                                                                                                                               48
                                                                                                                                                                                              61 GVWQEDEG-----
                                                                                                                                                                                                                                                                                                                                                                                                91;
                                                                                                                                                                                                                                                                                                                                            1 MNQSHKPPSIVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEPD-------
                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
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                                                                                                                                                                                                                        -----DPGYAAHGAAARKLAAAENAVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASA 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ש
PVSELATAVAFDEASRRGVELIAVHAW-----SDVEVVELPGLDFSAVQQEAELSLAERL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               295 AA;
                                              WI-----VVEADGSSDIGVLLGAVMAEARLRDSPVRVVTCRQSGVGDTGDDVRASLDRWL
                                                                                               EAEMVVLGSSGRGALARGLLGSVSSSLVRRAGCPVAVIHSDDAVIPDPQHAPVLVGIDGS
                                                                                                                                                                                                                                                                                                MSKPRKQHGVVVGVDGSLESDAAACWGATDAAMRNI PLTVVHVVNADVATWPPMPYPETW
                                                                                                                                                                                                                                                                                                                                                                                             Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            antigen.
                                                                                                                                                                                                                                                                                                                                                                                                                    18.2%;
                                                                                                                                                                                              -RQIVA--NAVKLAKEAV-GADRKLSVKSELVFSTPVPTMVEISN
                                                                                                                                                                                                                                                                                                                                                                                                43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     immunisation; antibacterial; gene therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                       Score 257; DB 8;
Pred. No. 7.2e-18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Stryhn
                                                                                                                                                                                                                                                                                                                                                                                                Mismatches 126;
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                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 295
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                                              This invention describes a novel polypeptide (PP) of somatic proteins CC extract (I) which have tuberculostatic activity. (I) or their subsequence CC has at least one of the following properties: (a) the PP induces an in CC vitro recall response, or an in vitro response, during primary infection CC with virulent Mycobacterium, determined by a release of interferon (IFN)-CC gamma, (b) PP induces a protective immunity, determined by vaccinating an CC animal with PP and an adjuvant, three times at two weeks intervals, (c) PP induces an in vitro response, or in vitro recall response, determined CC by release of IFN-gamma of at least 1000 pg/ml or 500 pg/ml, CC respectively, from Peripheral Blood Mononuclear Cells (PBMC) withdrawn CC from TB patients, or PPD positive individuals, 6 months after diagnosis, (d) PP induces a specific antibody response in a TB patient, as CC determined by enzyme linked immunosorbent assay (ELISA) technique or a CC western blot, (e) PP induces a positive delayed type hypersensitivity (CDFH) response, determined by intradermal injection. (I) and (II) are CC useful in preparing a prophylactic or therapeutic medicine as a vaccine CC useful in preparing a prophylactic or therapeutic medicine as a vaccine CC mammal against infection with a virulent Mycobacterium. (I) and (II) are CC also useful as diagnostic reagent for the diagnosis of a virulent CC mycobacterium infection. The vaccine of the invention induces efficient immunological memory, providing long term protection against TB. This sequence represents a Microbacterium tuberculosis TB32 antigen described con the invention.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Novel polypeptide of somatic protein extract useful as vaccine against virulent Mycobacterium infection, isolated from cell wall, cell membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2000-317931/27.
N-PSDB; AAA39572.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        08-OCT-1998;
21-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1; Page 106-107; 126pp; English
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tuberculosis; TB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            M. tuberculosis antigen TB32 protein.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Andersen P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200021983-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  infection; interferon-gamma; I delayed type hypersensitivity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAY87878 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (STAT-) STATENS SERUM INST
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ARWQPRYPDVRVQSAAVHGELLDYLAGLGRSVHMVVLSASDQEHVE-QLVGAPGNAVLQE 266
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
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99US-0116673P.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         antigen; vaccine; diagnosis; somatic; tuberculostatic;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  response; TB32.
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RESULT 6
ABG30907
ID ABG3
XX ABG3
AC ABG3
XX ADG1
DT 21-C
XX ANG1
KW ANT1
KW NON-
KW TUDE
KW WOOL
XX WOOL
XX WOOL
PF 11-I
XX MOOL
XX MYCC
PR 11-I
XX MOOL
XX MYCC
XX Idel
PT DICL
XX WPI
DR WPI
DR WPI
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CC The
CC DICC
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Best Local
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                                                                                                                    Identifying an anti-mycobacterial agent that modulates activity/expression of a protein expressed by Mycobacterium, monitoring the effect of an agent on the activity/expression protein or polynucleotide/vector encoding it.
                                                                                                                                                                                                              N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                     11-DEC-2001; 2001WO-EP014551
                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200248391-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mycobacterium tuberculosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                non-oxygen limiting; hypoxic stationary; hypoxic growth phase;
tuberculosis; dormant mycobacterial infection; dormancy-induced;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Anti-mycobacterial; Mycobacterium tuberculosis; strain H37Rv;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mycobacterium tuberculosis dormancy-induced protein Rv2623.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABG30907;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABG30907
                                                                                                                                                                                                                                                                                                                                   13-DEC-2000; 2000GB-00030368
                                                                                                                                                                                                                                                                                                    (MOLE-) INST MOLECULAR & CELL BIOLOGY.
                                                                                                                                                                                                            2002-583530/62.
DB; ABK89546.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           105 ALVCVGAIGVHHFRPERVGSTAAALALSAQCPVAIV-----RPHRVPIGRDAAWIVV 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 52 AA----HGAAARKLAAAENAVRYAFTAVEAAD---RPVKVEVEITQERPVTSLIRASAAA 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MNQSHKPPSIVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEPD------DPGY 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                               Calvin BKK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GVDGSSASELATAIAFDEASRRN--VDLVALHAWSDVDVSEWPGIDWPATQSMAEQVLAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RLAGWQERYPNVAITRVVVRDQPARQLVQRSEBAQLVVVGSRGRGGYAGMLVGSVGETVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VLMVVGCLGSGRWPGRLLGSVSSGLLRHAHCPVVIIHDEDSVMPHPQQAP-----VLV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     37; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       134;
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The present invention relates to a new method for the identification anti-mycobacterial agent that modulates activity and/or expression of protein expressed by Mycobacterium in non-oxygen limiting or hypoxic stationary, hypoxic growth phase. The method involves contacting a te

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                                                                                                                                                                                                                                Corynebacterium glutamicum; metabolic pathway protein; MP protein; fine chemical production; microorganism; organic acid; nucleoside; nonproteinogenic amino acid; purine base; pyrimidine base; nucleotide; lipid; saturated fatty acid; unsaturated fatty acid; diol; vitamin; carbohydrate; aromatic compound; cofactor; polyketide; enzyme.
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                                                                                                                  2000WO-IB000923.
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Σ Kroeger В, Schroeder H, Zelder O, Haberhauer 0

N-PSDB; 2001-137957/14. AAF71759.

Nucleic acids from Corynebacterium glutamicum proteins, useful for producing fine chemicals including organic acids, nonproteinogenic amir pyrimidine bases. icum encoding metabolic cals in microorganisms, amino acids, and purine purine and pathway

Claim 20; Page 174-175; 1737pp; English.

AAF71753 to AAF72330 encode the Corynebacterium glutamicum metabolic pathway (MP) proteins given in AAB79634 to AAB80211. The C. glutamicum MI nucleic acids are useful for the production of fine chemicals in microorganisms, including organic acids, nonproteinogenic amino acids, purine and pyrimidine bases, nucleosides, nucleotides, lipids, saturated microorganisms, including organic acids, nonprotesi purine and pyrimidine bases, nucleosides, nucleoti-and unsaturated fatty acids, diols, carbohydrates, cofactors, polyketides and enzymes aromatic compounds ¥

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                         The present invention relates to the isolation of novel Corynebacterium glutamicum genes (AAS96073-AAS96132) encoding metabolic pathway (MP) proteins. The metabolic pathway proteins of the invention include enzymes involved in the lysine and methionine biosynthetic pathways. The polynucleotide sequences of the invention can be used for the large-scale
                                                                                                                                                                                                                          Nucleic acids encoding metabolic glutamicum, useful for producing and Brevibacterium.
                                                                                                                                                                                                                                                                                                                                                                                                   Pompejus
Kim J, I
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23-JUN-2000;
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  polynucleotide sec
production and/or
                                                                                                                                                                           Disclosure;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VVVAVDGSDASKQAVRWAANTANKRGI PLRLASSYTMPQFLYAEGMVPPQELFDDLQAEA
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                                                                                                                                                                         Page 169-170;
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H, Hwang B;
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2000US-00606740
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  modulation of
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                                                                                                                                                                         316pp;
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Pred. No. 1.2e-12;
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     expression of fine
                                                                                                                                                                                                                                                 pathway proteins from methionine and lysine
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     chemicals
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     Buch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              chemical;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            lysine and methionine. The sequences of the invention may be used identify C. glutamicum and related organisms e.g. C. diphtheriae i subject to detect diphtheria. AAU71863-AAU71922 represent the nove glutamicum metabolic pathway proteins of the invention
                                    Claim
                                                                                                                                                                                                                                                                                                                                          Metabolic pathway protein; MP; lysine biosynthesis pathway; methionine biosynthesis pathway; large-scale production of Corynebacterium diphtheriae; diphtheria.
                                                            glutamicum, useful and Brevibacterium
                                                                       Nucleic acids encoding glutamicum, useful for
                                                                                                                                               Pompejus M,
Kim J, Lee
                                                                                                                                                                                                          09-MAR-2000;
23-JUN-2000;
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                                                                                                                                                                                                                                                                                                                     Corynebacterium
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                                    24; Page 150-151; 316pp; English.
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                                                                                                             AAS96075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  standard;
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                                                                                                                                               Kroeger B,
H, Hwang B;
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2000US-00606740.
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                                                                                                                                                                                                                                                                                                                    glutamicum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein;
                                                                                                                                                                                                                                                                                                                                                                                                                    entry)
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                                                                       metabolic
producing
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                                                                                                                                                            Schroeder
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
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Pred. No. 1.2e-12;
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                                                                         pathway proteins from methionine and lysine
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                                                                                                                                                            Zelder O,
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                                                                                                                                                             Haberhauer
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                                                                          Corynebacterium in Corynebacterim
                                                                                                                                                                                                                                                                                                                                                          fine chemical;
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glutamicum

genes

invention relates to the isolation genes (AAS96073-AAS96132) encoding r

n of novel metabolic 0f

Corynebacterium pathway (MP)

present

Claim 17; SEQ ID NO 6745;

246pp +

Sequence Listing;

English

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RESULT 10
AAG92991
ID AAG9292
XX AAG92
XX AAG92
XX ZAG92
XX ZAG92
XX COTYT
XX COTYT
XX COTYT
XX EP11C
XX EP11C
XX I6-DF
PR 16-DF
PR 03-AL
XX IF-DF
PR 03-AL
XX WPI;
DR WPI;
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Best Local S
Matches 77
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07-APR-2000;
03-AUG-2000;
                                                                                                                                                   Nakagawa
Tateishi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             proteins. The metabolic pathway proteins of the invention include enzymes involved in the lysine and methionine biosynthetic pathways. The polymucleotide sequences of the invention can be used for the large-scale production and/or modulation of expression of fine chemicals such as lysine and methionine. The sequences of the invention may be used to identify C. glutamicum and related organisms e.g. C. diphtheriae in a subject to detect diphtheria. AAU71863-AAU71922 represent the novel C. glutamicum metabolic pathway proteins of the invention
                 Novel polynucleotides derived from Coryneform bacteria, for identifying mutation point of a gene, measuring expression of a gene, analyzing expression profile or pattern of a gene and identifying homologous gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C glutamicum
                                                                                                                                                                                                                                                                                                                           18-DEC-2000; 2000EP-00127688
                                                                                                                                                                                                                                                                                                                                                                   20-JUN-2001.
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                                                                                                                                                                                                           (КҮОМ ) КУОМА НАККО КОСТО КК
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2000JP-00159162.
2000JP-00280988.
                                                                                                                                                   Mizoguchi H, Ando S, Hayashi M,
Senoh A, Ikeda M, Ozaki A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               synthesis.
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26.1%;
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Pred. No. 1.2e-12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO: 6745.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   synthesis; vitamin;
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RESULT 11
ABG80324
ID ABG80324
AC ABG80
XX ABG80
XX IS-NC
DT 15-NC
XX Metak
KW Cofac
KW Cofac
KW DYTIM
KW AFOMATH
XX COFYT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Metabolic pathway protein; MP; cell metabolism; amino acid; vitamin; cofactor; nucleotide; nucleoside; trehalose; fine chemical production; organic acid; non-proteinogenic amino acid; purine base; carbohydrate; pyrimidine base; lipid; unsaturated fatty acid; diol; polyketide; aromatic compound; food industry; animal feed; cosmetic industry;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      aromatic compound; food pharmaceutical industry;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABG80324 standard;
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                                 Pompejus M,
                                                                                                                                                             22-DEC-2000;
                                                                                                                                                                                                                             22-DEC-2000; 2000WO-EP013143
                                                                                                                                                                                                                                                                                                                                                         WO200251231-A1
                                                                                                                                                                                                                                                                                                                                                                                                                      Corynebacterium glutamicum ATCC 13032
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                                                                                                    (BADI ) BASF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LEKINEARD-----IAHEVAPE-IKIGHTIAEGSPIDMLLEMSPDATMIVMGSRGLGGL 119
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IVVGIDGSKPAVQAALWAVDEAASRDIPLRL-----LYA---IEPDDPGYAAHGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KIITRDRPVRALAEASENAQLLVVGSHGRGGFKGMLLGSTSRALLQSAPCPMMVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SAAVHGELLDYLAGLGRSVHMVVLSASDQEHVE-QLVGAPGNAVLQEAGCTLLVV 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EARGAELVAVHTWMDMQVQASLAGLAAAAQQQWDEVERQQTDMLIERLAPLVEKYPSVTVK
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RPERVGSTAAALALSAQCPVAIVRPHRVPIGRDAAW--IVVEADGSSDIGVLLGAVMAEA 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VVVAVDGSDASKQAVRWAANTANKRGI PLRLASSYTMPQFLYAEGMVPPQELFDDLQAEA
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                                    Kroeger
                                                                                                                                                                 2000WO-EP013143
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         enzyme.
                                    Zelder
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Pred. No. 1.2e-12;
6; Mismatches 134
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RESULT 12
AEB15399
ID AEB15
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AC AEB15
XX
AC AEB15
XX
C Glu
XX
Metab
KW metab
KW genom
XX
GOS COTYD
XX
US200
XX
PR 06-DE
XX
PR 25-JI
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The present invention relates to the isolation of Corynebacterium glutamicum metabolic pathway (MP) proteins, and the polynucleotide sequences encoding them. The MP proteins are enzymes involved in the metabolism of molecules important for the normal functioning of cells (e.g. amino acids, vitamins, cofactors, nucleotides and nucleosides, or trehalose). The polynucleotide sequences encoding the MP proteins are useful for producing fine chemicals, particularly organic acids, non-proteinogenic amino acids, purine and pyrimidine bases, nucleosides, nucleotides, lipids, (un)saturated fatty acids, diols, carbohydrates, aromatic compounds, vitamins, cofactors, polyketides and enzymes. The fine chemicals are useful in the food, animal feed, cosmetic or pharmaceutical industries. ABG80321-ABG80343 represent the C. glutamicum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New metabolic pathway genes of Corynebacterium glutamicum for producing fine chemicals, e.g. lipids, (un) saturated fatty acids, vitamins, cofactors or enzymes used in food, feed, cosmetics or pharmaceutical
                                                                                                                                                                                                                                                C glutamicum metabolic pathway regulatory (MR) protein SeqID314.
   25-JUN-1999;
                                       06-DEC-2004; 2004US-00006098
                                                                            14-JUL-2005.
                                                                                                                 US2005153402-A1
                                                                                                                                                      Corynebacterium
                                                                                                                                                                                                           metabolism; microorganism detection; microorganism identification;
                                                                                                                                                                                                                                                                                       22-SEP-2005
                                                                                                                                                                                                                                                                                                                                                              AEB15399 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 301 AA;
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)B; ABS65345.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            77;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                          evolution;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SAAVHGELLDYLAGLGRSVHMVVLSASDQEHVE-QLVGAPGNAVLQEAGCTLLVV 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RPERVGSTAAALALSAQCPVAIVRPHRVPIGRDAAW--IVVEADGSSDIGVLLGAVMAEA 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ARKLAAAENAVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAAALVCVGAIGVHHF 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                            KIITRDRPVRALAEASENAQLLVVGSHGRGGFKGMLLGSTSRALLQSAPCPMNVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EARGAELVAVHTWMDMQVQASLAGLAAAAQQQWDEVERQQTDMLIERLAPLVEKYPSVTVK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RLR-----DSPVRVVTCRQSGVGDTGDDV-RASLDRWLARWQP---RYPDVRVQ 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SGMVMGSVSGAVVSHAKCPVVVVREDSA-VNEDSKYGPVVVGVDGSEVSQQATEYAFAEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LEKINEARD-----IAHEVAPE-IKIGHTIAEGSPIDMLLEMSPDATMIVMGSRGLGGL 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VVVAVDGSDASKQAVRWAANTANKRGIPLRLASSYTMPQFLYAEGMVPPQELFDDLQAEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Page 107-108; 176pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                       (first entry)
   99US-0141031P
                                                                                                                                                    glutamicum
                                                                                                                                                                                          protein production.
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26.1%;
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Pred. No. 1.2e-12;
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AAU62080 ID AAU XX

AAU62080 standard; protein;

316

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RESULT 13

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                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                       polypeptides from Corynebacterium glutamicum, designated MR proteins, and the DNA sequences which encode them. The invention is useful in identification of C glutamicum and related organisms, mapping of genomes of organisms related to C glutamicum, identification and localization of C glutamicum sequences of interest, evolutionary studies, determination of MR protein regions required for function, modulation of MR protein activity and modulation of cellular production of desired compounds such as a fine chemical. The present sequence is that of a novel isolated metabolic pathway regulatory polypeptide of the invention from Corynebacterium glutamicum. Note: This sequence does not appear in the specification but was obtained in electronic format directly from USPTO.
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31-AUG-1999;
03-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-JUL-1999;
01-JUL-1999;
08-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        An isolated metabolic pathway regulatory polypeptide from Corynebacterium glutamicum, its portion, or its variant, useful for diagnosing presence or activity of C. diphtheriae in subject.
                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 20; SEQ ID NO 314; 65pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N-PSDB;
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09-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pompejus M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             03-SEP-1999;
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                                                                                                                                                                                               67
                                                                                                                                                                                                                              58 ARKLAAAENAVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAAALVCVGAIGVHHF
                                                                                                                                                                                                                                                                                               10 IVVGIDGSKPAVQAALWAVDEAASRDIPLRL-----LYA---IEPDDPGYAAHGAA
                                                                                                                                                                                                                                                                7
                                                                                                                                                                                                                                                                                                                             . Similarity 77; Conserv
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                                                                                                RLR-----DSPVRVVTCRQSGVGDTGDDV-RASLDRWLARWQP---RYPDVRVQ
                                                                                                                                 SGMVMGSVSGAVVSHAKCPVVVVREDSA-VNEDSKYGPVVVGVDGSEVSQQATEYAFAEA
                                                                                                                                                             RPERVGSTAAALALSAQCPVAIVRPHRVPIGRDAAW--IVVEADGSSDIGVLLGAVMAEA
                                                                                                                                                                                               LEKINEARD-----IAHEVAPE-IKIGHTIAEGSPIDMLLEMSPDATMIVMGSRGLGGL
                                                                                                                                                                                                                                                                VVVAVDGSDASKQAVRWAANTANKRGIPLRLASSYTMPQFLYAEGMVPPQELFDDLQAEA
                                                                                                                                                                                                                                                                                                                                                                                               301 AA;
KIITRDRPVRALAEASENAQLLVVGSHGRGGFKGMLLGSTSRALLQSAPCPMMVV
                            SAAVHGELLDYLAGLGRSVHMVVLSASDQEHVE-QLVGAPGNAVLQEAGCTLLVV
                                                              EARGAELVAVHTWMDMQVQASLAGLAAAQQQWDEVERQQTDMLIERLAPLVEKYPSVTVK
                                                                                                                                                                                                                                                                                                                               Conservative
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99US-0142690P.
99DE-01031419.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             relates to novel isolated metabolic pathway regulatory
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99DE-01032122.
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26.1%;
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                                                                                                                                                                                                                                                                                                                               46; Mismatches 134;
                                                                                                                                                                                                                                                                                                                                              Score 207; DB 9;
Pred. No. 1.2e-12;
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Best Local :
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02-JUN-2000;
07-JUL-2000;
                                                                                                                                                                                                                                                                                                and determining the amount of bound protein in the sample. The polypeptides may be used as antigens in the production of antibodies specific for P. acnes proteins. These antibodies can be used to downregulate expression and activity of P. acnes polypeptides and therefore treat P. acnes infections. The antibodies may also be used as diagnostic agents for determining P. acnes presence, for example, by enzyme linked immunosorbent assay (ELISA). Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                           polypeptides. The proteins and their associated DNA sequences are used in the treatment, prevention and diagnosis of medical conditions caused by P. acnes. The disorders include SAPHO syndrome (synovitis, acne, pustulosis, hypertosis and osteomyelitis), uveitis and endophthalmitis. P. acnes is also involved in infections of bone, joints and the central nervous system, however it is particularly involved in the inflammatory lesions associated with acne vulgaris. A method for detecting the presence or absence of P. acnes in a patient comprises contacting a sample with a binding agent that binds to the proteins of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SAPHO syndrome; synovitis; acne; pustulosis; hypertosis; osteomyelitis; uveitis; endophthalmitis; bone; joint; central nervous system; EIISA; inflammatory lesion; acne vulgaris; enzyme linked immunosorbent assay; dermatological; osteopathic; neuroprotectant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequences AAU39105-AAU68017 represent Propionibacterium acnes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example 1; SEQ ID NO 23275; 1069pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Propionibacterium acnes vaccinating against and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Skeiky YAW,
                                                                                                                                                                                                                                                Sequence 316
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                                                                                                                                                                                                                                                                                ftp.wipo.int/pub/published_pct_sequences
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                                                                                                                                                                                           Local
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 125
                                  105 VVVDDAIHVATERGMDPDRISGEVVLGNPAAILADRSADAQLVVLGRRATSGLERMFVGS
                                                                     70
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                                                                                                                                                                                             Similarity
 TAAALALSAQCPVAIVRPHRVPIGRDAAWIVVEADGSSDIG-VLLGAVMAEARLRDSPVR 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               acne vulgaris.
                                                                                                                                         IVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEPDDPGYAAHGAAARKLAAAENAVR 69
                                                                     YA----FTAVEAADRPVKVEVEITQERPVTSLIRASAAALVCVGAIGVHHFRPERVGS 124
                                                                                                        IIVGVDGSEDGLRAARYAAGSAIKRDADLIVLHAV--DDAAVAGAWGVVYDPTALQDAGQ 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; 2000US-0199047P.
; 2000US-0208841P.
; 2000US-0216747P.
                                                                                                                                                                                                                                                  Å,
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                                                                                                                                                                                             13.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               polypeptides and nucleic acids useful for diagnosing infections, especially useful for
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, Jen S, Carter
                                                                                                                                                                              43,
                                                                                                                                                                                             Score 194; DB 4;
Pred. No. 2.8e-11;
                                                                                                                                                                            Mismatches
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                                                                                                                                                                              151;
                                                                                                                                                                                                             4; Length 316;
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                                                                                                                                                                              Indels
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are used in
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cc encoding a Propionibacterium across protein. The invention also relates to complypeptides encoded by the polymucleotides (ABM35624-ABM6436) and to complypeptides encoded by the polymucleotides. The invention and to comprising a polypeptides. The invention comprising a golymucleotide of the invention; antibodies against polypeptides of the invention; fusion proteins comprising a polypeptide of the invention; a comprising the invention; a comprising T cells prepared to this method; a vaccine composition (comprising T cells prepared compresenting cells that express the polypeptide; a method and kit for detecting or determining the presence or absence of p. across in a compatient; and a method for inhibiting the development of p. across in a patient. The p. across polypeptides, polymucleotides, antibodies, fusion proteins, T cell populations or antigen-presenting cells that express the composition of proteins. T cell populations or antigen-presenting cells that express the composition of an immune response specific for a p. across of compressing across of the composition of the composition of the composition of the composition of an immune response specific for a p. acros of composition of an immune response specific for a p. acros of composition of an immune response specific for a p. acros of composition of an immune response specific for a p. acros of composition of an immune response against p. across or for treating across of and the kit is useful for performing a diagnostic assay. The present composition composition composition of the present composition assay. The present composition 
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Barth B,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New Propionibacterium acnes polypeptides and polynucleotides encoding the polypeptide, useful for diagnosing, preventing or treating acne vulgaris, or for stimulating an immune response specific for a P. acnes protein.
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N-PSDB; ACF64552.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to an isolated polynucleotide (ACF64435-ACF64733)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Propionibacterium acnes predicted ORF-encoded polypeptide #23275.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                standard; protein; 316 AA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LSASDQEHVEQLVGAPGNAVLQEAGCTLLV 273
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "I, Skeiky YAW, Persing DH,
Wang S, Jen S, Lodes MJ,
Vallieve-Douglass J;
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Benson DR,
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Jones R, C
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                                                                                                                                                                                                                                        21-MAR-2001; 2001US-00815242.

06-SEP-2001; 2001US-00948993.

25-OCT-2001; 2001US-0342923P.

08-FEB-2002; 2002US-00072851.

06-MAR-2002; 2002US-0362699P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        reading frame) contained within the P. acnes polynucleotides of the invention. Note: The sequence data for this patent did not form part the printed specification, but was obtained in electronic format diffrom WIPO at ftp.wipo.int/pub/published_pct_sequences
 The invention relates to an isolated nucleic acid comprising any one
                             Claim 25; SEQ ID NO 53861; 1766pp; English
                                                                          New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to
                                                                                                                       N-PSDB;
                                                                                                                                                                                                                                                                                                                                 21-MAR-2002; 2002WO-US009107.
                                                                                                                                                                                                                                                                                                                                                                03-OCT-2002.
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                                                                                                                                                                                                                                                                                                                                                                                                                          Corynebacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Antisense; prokaryotic essential gene; cell proliferation; drug design.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 316
                                                            isolate candidate molecules
                                                                                                                                                                                                              (ELIT-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Protein encoded by Prokaryotic essential gene #11464
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YA----FTAVEAADRPVKVEVEITQERPVTSLIRASAAAALVCVGAIGVHHFRPERVGS
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Carr G
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25.2%; Pred. No. 2.8e-11;
tive 43; Mismatches 151
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                                                            for rational drug
                                                                                                                                                                 Yamamoto R,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    polypeptide or its fragment whose expression is inhibited by the polypeptide, (5) producing the polypeptide; (6) inhibiting cellular proliferation or the activity of a gene in an operor required for proliferation, (7) identifying a compound that influences the activity of the gene product or that has an activity against a biological pathway required for proliferation, or that inhibits cellular proliferation; (8) identifying a gene required for cellular proliferation or the biological pathway in which a proliferation-required gene or its gene product lies or a gene on which the test compound that inhibits proliferation of an organism acts; (9) manufacturing an antiblotic; (10) profiling a compound's activity; (11) a culture comprising strains in which the gene product is overexpressed or underexpressed; (12) decermining the extent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs, or for screening homologous nucleic acids required for proliferation in cells other than S. aureus, S. typhimurium, K. pneumoniae or P. aeruginosa. The present sequence is encoded by one of the traget prokaryotic essential genes. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the 6213 antisense sequences given in the specification where expression of the nucleic acid inhibits proliferation of a cell. Also included are: (1) a vector comprising a promoter operably linked to the nucleic acid encoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) a host cell containing the vector; (3) an isolated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             to which each of the strains is present in a culture or collection of strains; or (13) identifying the target of a compound that inhibits the proliferation of an organism. The antisense nucleic solds are useful for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 300 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ftp.wipo.int/pub/published_pct_sequences
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240 VITRDRPVRALEDCAHNAQLLVVGSHGRGGFRGMLLGSTSRALLQSAPCPMVVV
                                                                                                                                                                                                                                                  118 RPERVGSTAAALALSAQCPVAIVR-PHRVPIGRDAAWIVVEADGSSDIGVLLGAVMAEAR 176
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                                                                                                                                                                                                                                                                                                                                                  58 ARKLAAAENAVRYAFTAVEAADREVKVEVEITQEREVTSLIRASAAAALVCVGAIGVHHF 117
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                 AAVHGELLDYLAGLGRSVHMVVLSASDQEHVE-QLVGAPGNAVLQEAGCTLLVV
                                                                                                                                                 LRDSP-VRVVTCRQSGVGDTGDDVRASLDRW------LARWQP---RYPDVRVQS
                                                                                                                                                                                                     SGMVMGSVSAAVVSHADCPVVVVRSDNHVTETNKYGPVVVGVDGSDVSQRATEFAFEEAQ
                                                                                                                                                                                                                                                                                                      MDMIEAAR-----VVAHEVAP-DIKIGYVIAEGSPIDMLLDMSSDVTMIVMGSRGLGGL 119
                                                                                                ARGAKLVAIHTWMDMQVQASLAGLAAAAQQEWEIIEKEQTTLLKDRLQPLLERFPDVEVEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 180; DB 6;
Pred. No. 7.6e-10;
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Search completed: March 23, 2006, 05:10:40 Job time: 77.1768 secs

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Title:
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                                                                                                       March 23, 2006, 05:11:18; Search time 11.1001 Seconds (without alignments)
MNQSHKPPSIVVGIDGSKPA......GNAVLQEAGCTLLVVGQQYL
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Scoring table: Gapop 10.0 , Gapext 0.5 BLOSUM62

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters:

Minimum Maximum DB DB seq seq length: 0 length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

PIR\_80:\*
1: pir1:\*
2: pir2:\*
3: pir3:\*
4: pir4:\*

Database

Pred. No. is the number of results predicted by chance to have score greater than or equal to the score of the result being predicted by analysis of the total score distribution. printed,

#### SUMMARIES

| ţ |         |                    |                    |                    |                    | 24                 |                    |                    | 21     | 20     | 19     | 18                 | 17                 | 16                 | 15                 | 14                 | 13                 | 12                 | 11                 | 10                 | 9                  | 00     | 7      | თ                  | IJ     | 4      | ω      | 2                  | <b>–</b> | Result<br>No.  |  |
|---|---------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------|--------|--------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------|--------|--------------------|--------|--------|--------|--------------------|----------|----------------|--|
|   | 99      | 99                 | 99.5               | 100.5              | 101.5              | 101.5              | 101.5              | 102.5              | 103.5  | 104    | 105    | 106.5              | 112.5              | •                  | 116                | 123                | 136                | 170.5              | 180.5              | 182.5              | 207                | 211    | 211.5  | 214                | 224    | 257    | 416    | 431.5              | 1410     | Score          |  |
| ; | 7.0     | 7.0                | 7.1                | 7.1                | 7.2                | 7.2                | 7.2                | 7.3                | 7.3    | 7.4    | 7.4    | 7.6                | 8.0                | 8.1                | 8.2                | 8.7                | 9.6                | 12.1               | 12.8               | 12.9               | 14.7               | 15.0   | 15.0   | 15.2               | 15.9   | 18.2   | 29.5   | 30.6               | 100.0    | Query<br>Match |  |
|   | 3172    | 442                | 145                | 152                | 402                | 149                | 143                | 1106               | 250    | 154    | 331    | 561                | 201                | 2240               | 657                | 148                | 152                | 288                | 301                | 317                | 283                | 328    | 294    | 297                | 294    | 295    | 272    | 268                | 279      | Length         |  |
|   | v       | N                  | N                  | N                  | N                  | N                  | Ŋ                  | N                  | N      | N      | N      | N                  | N                  | N                  | N                  | N                  | N                  | N                  | N                  | N                  | N                  | N      | N      | N                  | N      | N      | N      | N                  | N        | B B            |  |
|   | \$22012 | C83256             | A86854             | AF1634             | B72502             | A69220             | A69233             | C87128             | B70502 | AD1272 | B87371 | T36084             | T37036             | T37057             | H70872             | T36960             | T36954             | T37029             | T37031             | B70758             | T36962             | T36963 | A70942 | F70572             | T36949 | C70759 | G70572 | G70645             | C70942   | ID             |  |
|   | TO .    | hypothetical prote | conserved hypothet | hypothetical prote | probable ornithine | conserved hypothet | conserved hypothet | probable transcrip | -      | μ      | =      | hypothetical prote | hypothetical prote | probable multi-dom | probable ctpD prot | hypothetical prote | _      | _      | hypothetical prote | ₼.     | -      | •      | hypothetical prote | •        | Description    |  |

| 45                 | 44                 | 3                  | 42                 | 41                 | 40                 | 39                 | 38                 | 37                 | 36                 | 35                 | 34                 | ü                  | 32                 | <u>ω</u>           | 30                 |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 94.5               | 94.5               | 94.5               | 94.5               | 94.5               | 94.5               | 95                 | 95                 | 96                 | 96                 | 96.5               | 96.5               | 96.5               | 97.5               | 98.5               | 98.5               |
| 6.7                | 6.7                | 6.7                | 6.7                | 6.7                | 6.7                | 6.7                | 6.7                | 6.<br>8            | 6.8                | 6.<br>8            | 6.<br>B            | 6.8                | 6.9                | 7.0                | 7.0                |
| 463                | 413                | 354                | 329                | 274                | 157                | 1763               | 335                | 490                | 150                | 3491               | 2108               | 571                | 660                | 3643               | 888                |
| N                  | N                  | N                  | N                  | 2                  | N                  | N                  | N                  | N                  | N                  | N                  | N                  | N                  | N                  | N                  | N                  |
| A46449             | A70795             | D35255             | H70794             | AI3643             | A84402             | T17465             | A71042             | B87023             | G84340             | T43231             | H70819             | C75530             | H70798             | T36410             | D87433             |
| hypothetical prote | hypothetical prote | probable trans-chl | probable dnaQ prot | citrate (pro-3S)-1 | hypothetical prote | rifamycin polyketi | probable mevalonat | UDP-N-acetylmuramo | hypothetical prote | probable 6-deoxyer | probable polyketid | conserved hypothet | probable cation-tr | probable polyketid | conserved hypothet |

### ALIGNMENTS

A;Cross-references: UNIPROT:053474; UNIPARC:UPI00000D5EDC; GB:AL021899; GB:AL123456; NID A;Experimental source: strain H37Rv C;Genetics: A;Gene: Rv2028c Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, 537-544, 1998
A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G.
A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete genome A;Reference number: A70500; MUID:98295987; PMID:9634230
A;Accession: C70942 R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, S.; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, S.; Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. hypothetical protein Rv2028c - Mycobacterium tuberculosis (strain H37RV)
C;Species: Mycobacterium tuberculosis
C;Date: 17-Jul-1998 #sequence\_revision 17-Jul-1998 #text\_change 09-Jul-2004
C;Accession: C70942 S 밁 ঠ 밁 ð 밁 á 밁 Ś A;Status: preliminary; nucleic acid sequence not shown; translation not shown A;Molecule type: DNA A;Residues: 1-279 <COL> Query Match Best Local Similarity Matches 279; Conserv 181 241 181 121 121 RVGSTAAALALSAQCFVAIVRPHRVPIGRDAAWIVVEADGSSDIGVLLGAVWAEARLRDS 180 13 61 LAAAENAVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAAALVCVGAIGVHHERPE 120 ب MVVLSASDQEHVEQLVGAPGNAVLQEAGCTLLVVGQQYL 279 MNQSHKPPSIVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEPDDPGYAAHGAAARK 60 MNQSHKPPSIVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEPDDPGYAAHGAAARK PVRVVTCRQSGVGDTGDDVRASLDRWLARWQPRYPDVRVQSAAVHGELLDYLAGLGRSVH PVRVVTCRQSGVGDTGDDVRASLDRWLARWQPRYPDVRVQSAAVHGELLDYLAGLGRSVH 240 RVGSTAAALALSAQCPVAIVRPHRVPIGRDAAWIVVEADGSSDIGVLLGAVMAEARLRDS LAAAENAVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAAALVCVGAIGVHHFRPE 100.0%; Score 1410; DB 2; ilarity 100.0%; Pred. No. 1.4e-101; Conservative 0; Mismatches 0; Indels Length 279; 0 Gaps 240 180 120 60 0

241

RESULT 2 G70645

hypothetical protein Rv3134c - Mycobacterium tuberculosis (strain H37RV) C;Species: Mycobacterium tuberculosis C;Date: 17-Jul-1998 #sequence\_revision 17-Jul-1998 #text\_change 09-Jul-2004

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C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 09-Jul-2004 C;Accession: G70572 R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; H. Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, S37-544, 1998 Nature 393, S37-544, 1998 A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G. A;Title: Deciphering the biology of Mycobacterium tuberculosis from the comple A;Reference number: A70500; MUID:98295987; PMID:9634230
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A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G. A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete A;Reference number: A70500; MUID:98295987; PMID:9634230
A;Accession: G70645
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R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, School, Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Schares, S.
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                                                                                                                                                                                                                                                                                                A;Cross-references: UNIPROT:006188; UNIPARC:UPI00000D5EA1; GB:Z95387; GB:AL123456; A;Experimental source: strain H37Rv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  hypothetical protein Rv2624c - Mycobacterium tuberculosis (strain H37RV)
C;Species: Mycobacterium tuberculosis
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A; Residues: 1-268 <COL>
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Best Local Similarity
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                                                                                                                                                 98;
                                                                                                                                                                     Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DSPVRVVTCRQSGVGDTGDDV-----RASLDRWLARWQPRYPDVRVQSAAVHGELLDY 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RVGSTAAALALSAQCPVAIVRPH--RVPIGRDAAWIVVEADGSSDIGVLLGAVMAEARLR 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LAAAENAVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAAALVCVGAIGVHHFRPE 120
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  RYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAALVCVGAIGVHHFRPERVGSTAAA
                                                   TIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTHPSPDDYD----RDLAHAERSL
                                                                                           SIVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEPDDPGYAAHGAAARKLAAAENAV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -SAARAALHDASRKVEATGQPVKIETEVLCGRPLTKLMQESRSAAMLCVGSVGLDHVRGR 117
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                                                                                                                                              Score 416; DB 2;
Pred. No. 6.8e-25;
46; Mismatches 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 431.5; DB 2
Pred. No. 4.3e-26;
84; Mismatches 105
                                                                                                                                                 116;
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C;Accession: C70759

R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            hypothetical protein Rv2005c - Mycobacterium tuberculosis (strain H37RV)
C;Species: Mycobacterium tuberculosis
C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 09-Jul-2004
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A; Residues: 1-295 < COL>
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                                                                                                             ARWOPRYPDVRVOSAAVHGELLDYLAGLGRSVHMVVLSASDQEHVE-QLVGAPGNAVLQE 266
                                                                                                                                                         PVSELATAVAFDEASRRGVELIAVHAW
                                                                                                                                                                                                WI-----VVEADGSSDIGVLLGAVMAEARLRDSPVRVVTCRQSGVGDTGDDVRASLDRWL
                                                                                                                                                                                                                                                                                                                                                       -----DPGYAAHGAAARKLAAAENAVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASA 102
                                                                                                                                                                                                                                                                                                                                                                                                 MSKPRKOHGVVVGVDGSLESDAAACWGATDAAMRNI PLTVVHVVNADVATWPPMPYPETW
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294
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Pred. No. 1.4e-12;
3; Mismatches 126
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Holroyd, S.
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conserved hypothetical protein SCJ1.16c C;Species: Streptomyces coelicolor
C;Date: 03-Dec-1999 #sequence\_revision 03C;Accession: T36949

03-Dec-1999 #text\_change

09-Jul-2004

Streptomyces coelicolor

RESULT

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C;Accession: F70572
R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, F;Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, 537-544, 1998
A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G. A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete genome A;Reference number: A70500; MUID:98295987; PMID:9634230
A;Accession: F70572
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P7057Z
P7057Z
hypothetical protein Rv2623 - Mycobacterium tuberculosis (strain H37RV)
C;Species: Mycobacterium tuberculosis
C;Species: 17-Unl-1998 #sequence_revision 17-Jul-1998 #text_change 09-Jul-2004
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A;Residues: 1-294 <SBB>
A;Cross-references: UNIPROT: Q9RIZ8;
A;Experimental source: strain A3(2)
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ALVCVGAIGVHHERPERVGSTAAALALSAQCPVAIV-----RPHRVPIGRDAAMIVV |: | | | | | | | : | : | : | : | : |
                                                                   LRWQQDHG----
                                                                                                            AA----HGAAARKLAAAENAVRYAFTAVEAAD----RPVKVEVEITQERPVTSLIRASAAA 104
                                                                                                                                                                                                 MNQSHKPPSIVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEPD------DPGY
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                                                                                                                                                         MSSGNSSLGI I VGI DDSPAAQVAVRWAARDAELRKI PLTLVHAVSPEVATWLEVPLPPGV
                                                                                                                                                                                                                                            Conservative
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26.7%;
                                                                                                                                                                                                                                       15.2%; Score 214; DB 2; Length 29
27.2%; Pred. No. 2.9e-09;
tive 37; Mismatches 134; Indels
                                                                   --RHLIDDALKVVEQASLRAGPPTVHSEIVPAAAVPTLVDMSKDA 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          44;
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Pred. No. 4.8e-10;
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                                                                                                                                                                                                                                                                                                                                                                                              UNIPARC:UPI000003326C; GB:Z95387; GB:AL123456;
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RESULT 7
A70942
A70942
Aypothetical protein Rv2026c - Mycobacterium tuberculosis (strain H37RV)
C;Species: Mycobacterium tuberculosis
C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text change 09-7-1-7
C;Accession: A70942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: UNIPROT:053472;
A;Experimental source: strain H37Rv
C;Genetics:
A;Gene: Rv2026c
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Nature 393, 537-544, 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C;Accession: A70942
R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.;
; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Ho
Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.;
A;Title: Deciphering the biology of Mycobacterium tuberculosis fr
A;Reference number: A70500; MUID:98295987; PMID:9634230
A;Accession: A70942
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                                                                                                                                                              VALHAWTDLGMFPVLGMDWREREKREAEV-
                                                                                                                                                                                                                                                                                                                         QVIEQAREALTNSLGESKPPQVHTELVFSNVVPTLIDASQQAWLMVVGSQGMGALGRLLL 129
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$:
                                    W 274
                                                                                                                    YPDVRVQSAAVHGELLDYLAGLGRSVHMVVLSASDQEHVE-QLVGAPGNAVLQEAGCTLL 272
                                                                                                                                                                                                                                             GSISTALLHHARCPVAIIHSGNGATPDSDAPVLVGIDGSPASEAATALAFDEASRRRVDL 189
                                                                                                                                                                                                                                                                                 GSTAAALALSAQCPVAIVRPHRVPIGRDAAWIVVBADGS---------
                                                                                                                                                                                                                                                                                                                                                               -----VRYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAAALVCVGAIGVHHFRPERV 122
                                                                                                                                                                                                                                                                                                                                                                                                        ILVGVDGSAQSNAAVAWAAREAVMRQLPITLLHIVAPVVVGWPVGQLYANMTEWQKDNAQ 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                IVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEPDDPGYAAHGAAARKLA-AAENA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QLARTPVIV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VLMVVGCLGSGRWPGRLLGSVSSGLLRHAHCPVVIIHDEDSVMPHPQQAP----
                                                                          QEAGCTLLV
                                                                                                                                                                                                  -----SDIGV--LLGAVMAEARLRDSPVRVVTCRQSGVGDTGDDVRASLDRWLARWQPR 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15.0%; Score 211.5; DB 2 26.2%; Pred. No. 4.4e-09;
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NID

hypothetical protein SCJ1.30c - Streptomyces coelicolor C;Species: Streptomyces coelicolor C;Species: Streptomyces coelicolor C;Date: 03-Dec-1999 #sequence\_revision 03-Dec-1999 #text\_change 09-Jul-2004 C;Accession: T36963 C;Accession: T36963 Dec-1999 #text\_change 09-Jul-2004 C;Accession: T36963 Dec-1999 Picture 09-Jul-2004 Dec-1999 Picture

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RESULT

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A;Molecule type: DNA
A;Residues: 1-328 <SEE>
A;Cross-references: UNIPROT:Q9RIY4;
A;Experimental source: strain A3(2)
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A;Experimental source: strain A3(2)
C;Genetics:
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A; Reference number:
A; Accession: T36963
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                                                                                                               61 LAAAENAVRYAFTAVEAADR---PVKVEVEITQERPVTSLIRASAAAALVCVGAIGVHHFR 118
                                                                                                                                                                                            10 IVVGIDGSKPAVQAALWAVDEAASRDIPLRLLY-----AIEPDDPGYAAHGAAARK 60
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                                                                                                                                                                                                                                                      Similarity
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  DRLLGSVSRTVAAGSDCPVVVLRGNHDNRAIGGRNGRIVVGVGEVSASV--
                                      PERVGSTAAALALSAQCPVAIVR---PHRVPIGRDAAWIVVEADGSSDIGVLLGAVMAEA 175
                                                                          ILAA----AAIRAGRRHPDLVVTTETVPDEAEHALICAGRNASMIVMGSRGRSGIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RWQPRYPDVRVQSAAVHGELLDYLAGLGRSVHMVVLSASDQE-----HVEQLVGAPGNAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HHFRPERVGSTAAALALSAQCPVAIVR-----PHRV-----PIGRDAAWIVVEAD-G
                                                                                                                                                       LVVGVDGSEPSLRAVDWAADEAALHAVPLWVVFGDLWERYEGAALAREPGKPSTDMQADD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SPDDGVLSFA-FDEAQRRGTAVHVVSGWRPPPYYPSLTAGGVPDQGVARRKAADLTRLLL
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29.3%;
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                                                                                                                                                                                                                                    49;
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                                                                                                                                                                                                                                Score 207; DB 2;
Pred. No. 9.5e-09;
19; Mismatches 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 211; DB 2;
Pred. No. 5.5e-09;
                                                                                                                                                                                                                                                                                                                                                                     UNIPARC:UPI00000DB39B; EMBL:AL109962; PIDN:CAB53147
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                                                                                                                                                                                                                                    121;
                                                                                                                                                                                                                                                                      Length 283;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B.G.; Rajandream,
  LRLAFMEA
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  173
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C;Accession: B70758
R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, R;Cole, S.T.; Brosch, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, S; Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, 537-544, 1998
A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G. A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete genome A;Reference number: A70500; MUID:98295987; PMID:9634230
A;Accession: B70758
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
A; Residues: 1-317 < COL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              hypothetical protein Rv1996 - Mycobacterium tuberculosis (strain H37RV) C;Species: Mycobacterium tuberculosis C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 09-Jul-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Gene: Rv1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Status: preliminary; nucleic acid sequence not shown; translation not
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305 IV
                                             272 LV
                                                                                                                                                                                                                                                                                                                                                                                                                                                               10 IVVGVDGSPCSHTAVEWAARDAQMRNVALRVVQVVPPVITAPEGWAFEYSRFQEAQKREI
                                                                                                                                                                                                                                                                                                                                                                                                                  62 AAAENAVRYAFTAVEAA------DRPVKVEVEITQERPVTSLIRASAAAALVCVGA 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10 IVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEP---DDPGYA-----AHGAAARKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                        RYPDVVVHKVVVCDRPAPRLLELAQTAQLVVVGSHGRGGFPGMHLGSVSRAVVNSGQAPV
                                                                                                                                     RYPDVRVQSAAVHGELLDYLAGLGRSVHWVVLSASDQEHVEQL-VGAPGNAVLQEAGCTL
                                                                                                                                                                                                                                                                                                                     IGVHHFRPERVGSTAAALALSAQCPVAIV----RPHRVPIGRDAAWIVVEADGSSDIGVL 167
                                                                                                                                                                                     AEIAFDEASRRGVDL-VALHAWSDMGPLDFPRLNWAPIEWRNLEDEQEKMLARRLSGWQD
                                                                                                                                                                                                                                  LGAVMAEARLRDSPVRVVTCRQSGVG------DTGDDVRASLDRWLARWQP 212
                                                                                                                                                                                                                                                                             RGQGAVAGALLGSVSSSLVRHAHGPVAVIPEEPRPARPP----HAPVVVGIDGSPTSGLA
                                                                                                                                                                                                                                                                                                                                                                     VEHSYLVAQAHQIVEQAHKVALEASSSGRAAQITGEVLHGQIVPTLANISRQVAMVVLGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RVQSAAVHGELLDYLAGLGRSVHMVVLSASDQBHVEQLVGAPGNAVLQBAGCTLLVVGQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RLRDSPVRVVTCRQSGVGDTGDDVRASLDRWLARWQP--RY-------
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  306
                                             273
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12.9%; Score 182.5; DB 2; 25.8%; Pred. No. 8.3e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        43; Mismatches 138;
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s S

C;Species: Streptomyces coelicolor (3-Dec-1999 #te) (5,Date: 03-Dec-1999 #sequence\_revision 03-Dec-1999 #te) (5,Accession: T37031 R;Murphy, L; Harris, D.; Thomson, N.R.; Parkhill, J.; submitted to the EMBL Data Library, August 1999

03-Dec-1999 #text\_change 09-Jul-2004 Barrell,

B.G.; Rajandream,

м . А

hypothetical protein SCJ12.12c - Streptomyces coelicolor

A;Reference number: Z21619
A;Accession: T37031
A;Status: preliminary; tran
A;Molecule type: DNA

translated

from

GB/EMBL/DDBJ

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RESULT 12
1737029
hypothetical protein SCJ12.10c - Streptomyces coelicolor
C;Species: Streptomyces coelicolor
C;Species: Streptomyces coelicolor
C;Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 09-Jul-2004
C;Accession: T37029
C;Accession: T37029
R;Murphy, L.; Harris, D.; Thomson, N.R.; Parkhill, J.; Barrell, B.G.; Rajandream, submitted to the EMBL Data Library, August 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Residues: 1-301 <MUR>
A;Residues: 1-301 <MUR>
A;Cross-references: UNIPROT:Q9RI46; UNIPARC:UPI0000DB3E6; EMBL:AL109989; PIDN:CAB53424
A;Experimental source: strain A3(2)
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C;Genetics:
A;Gene: SCOEDB:SCJ12.12c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Status: preliminary; translated from GB/EMBL/DDBJA;Molecule type: DNA
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A;Experimental source: strain A3(2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Residues: 1-288 < MUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Accession: T37029
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Best Local
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181
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                                      168
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            122 VGSTAAALALSAQCPVAIVR------PHRVPIGRDAAW----IVVEADGSSDIG 165
                                                                                                                                                             61
                                                                                                                                                                                                   63
                                                                                                                                                                                                                                                                                    10 IVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIBPDDPGYAAHGAA-ARKL-----A 62
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                                                                                                                                                                                                                                                                                                                               76;
                                                                                                                                                                                                                                                                                                                                                Similarity
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                                      LGAVMA------EARLRDSPVRVVTCR-----QSGVGDTGDDVRASLDRWLARWQP 212
                                                                                                                                                             TTDDILAVATRRARRHHPDLAVTTEATAEEPEYVLLREARNASAVILGTRGRGELAGLLL
                                                                                                                                                                                                   AAENAVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAAALVCVGAIGVHHFRPERV 122
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KYPDVEVTETCRLGSPAEHLIDAARDASLVVVGRRIRRSPFGVH----IGAVAHAVMHHA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AVLSFAFEEARRRRAPLTAVRAWNLPSSYTYSIAAGFDPREELARAQAEALGEALLPWRE 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HWTERIPRDTAEGLRLRHPGVEVTTEQATGNPADALLAGTLDAELLVLGSRALSGLTGFL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEPDDPGYAAHGAAARKLAAAENAV 68
                                                                                                                  GSTAAALALSAQCPVAIVR-PH------RVPIG-RDAAWIVVE--ADGSSDIGVL 167
                                                                                                                                                                                                                                            MVVGVDGSESSLGAVDWAADEAALHEVPLRIVHAYRWD----RYEGASLARELGKPSGHV
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LDAVRAWRCPTHDTVDHPLLAGTPERLHEERAAKELEAALADAPADVR---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VGSVGQSVIARTETPVILVRAGEQAADEHLKDPTGIP---SAATGFRPVVVGLDTGSPDE 175
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                                                                                                                                                                                                                                                                                                                                                Score 170.5; DB 2
Pred. No. 6.3e-06;
                                                                                                                                                                                                                                                                                                                            Mismatches 125;
                                                                                                                                                                                                                                                                                                                                                                   DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
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                                                                                                                                                                                                                                                                                                                            59;
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A;Cross-references: UNIPROT:Q9RIY7; UNIPARC:UPI00000DB399; EMBL:AL109962; PIDN:CAB53145.
A;Experimental source: strain A3(2)
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                       R;Seeger, K.J.; Harris, D.; Thomson, N.R.; Parkhill, J.; Barrell, B.G.; Rajandream, submitted to the EMBL Data Library, September 1999
A;Reference number: Z21607
A;Accession: T36960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Gene: SCOEDB:SCJ1.21
C;Superfamily: Escherichia coli ybdQ protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               submitted to the EMBL Data Library, September 1999 A;Reference number: Z21607 A;Accession: T36954
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                                                                                                                                                                                                                                                                                                                                                                                                                                                      hypothetical protein SCJ1.27 - Streptomyces coelicolor
C;Species: Streptomyces coelicolor
C;Date: 03-Dec:1999 #sequence_revision 03-Dec-1999 #text_change 09-Jul-2004
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A;Experimental source: strain A3(2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R;Seeger, K.J.; Harris, D.; Thomson, N.R.; Parkhill, J.; Barrell, B.G.; Rajandream, M.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hypothetical protein SCJ1.21 - Streptomyces coelicolor
C;Species: Streptomyces coelicolor
C;Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 09-Jul-2004
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
A; Residues: 1-152 <SEE>
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Best Local :
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Best Local :
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                    157
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               273
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                      EADGSSDIGV----
                                                                                                LIRASAAAALVCVGAIGVHHFRPERVGSTAAALALSAQCPVAIVRPHRVPIGRDAAWIVV 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RRGRGAFARAMLGSVSQRCAQHAACPVVVVR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YAAHGAAARKLAAAENAVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAAALVCVG 110
                                                         LVAQALSAAAVVVGHRGPHPFQGALIGSLATGLAAHSECPVVVVGEPENPAGPVALGVDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FDLEQARERFAAELE---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MQPSEPTARVVVGVDGSPSSYAALRWADRYARAVGGVVEAVHVWDTPSAVGFAGPAIDPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MNQSHKPPSIVVGIDGSKPAVQAALWA-----VDEAASRDIPLRLLYAIEPDDPG 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EGPGSRVLSAASH--
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               274
                                                                                                                                       Conservative
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                                                                                                                                                      8.7%;
29.7%;
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                                                                                                                                       18;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ----ATFPGERPPGLKEILVEGDPSETLIRASQGAELLVVG
                                                                                                                                       Score 123; DB 2
Pred. No. 0.014;
8; Mismatches
                                                                                                                                                                                                                                                                                                                                         from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              from GB/EMBL/DDBC
----LLGAVMAEARLRDSPVRVVTCRQSGVGDTGDDVRA 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -EADLLVVGRRRPGQFGHRLGRVAHTLLHHSACPVA 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      71;
                                                                                                                                         66;
                                                                                                                                                                            Length 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 152
                                                                                                                                         Indels
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                                                                                                                                         18;
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G:Genetics:
A;Gene: ctpD
A;Gene: ctpD
C;Superfamily: Enterococcus copper-transporting ATPase copB; ATPase
F;25-394/Domain: ATPase transduction domain homology <ATT>
F;465-608/Domain: ATPase nucleotide-binding domain homology <ATN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               probable ctpD protein - Mycobacterium tuberculosis (strain H37RV)

(;Species: Mycobacterium tuberculosis

C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 09-Jul-2004

C;Accession: H70872

R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, S.; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, S.; Connor, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S.

Nature 393, 537-544, 1998

A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G.

A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete genome

A;Reference number: A70500; MUID:98295987; PMID:9634230

A;Accession: H70872
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Search completed: March 23, Job time: 12.1001 secs
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Best Local S
Matches 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;Status: preliminary; nucleic acid sequence not shown; translation not shown, ,Molecule type; DNA
,Residues: 1-657 <COL>
,Cross-references: UNIPROT:O53160; UNIPARC:UPI0000128642; GB:AL021184; GB:AL123456; NII,Experimental source: strain H37Rv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Match 8.2%; Score 116; DB 2; Length 657; Local Similarity 25.7%; Pred. No. 0.25; es 69; Conservative 32; Mismatches 101; Indels
                                                                                                                      570
                                                                                                                                                                          221 SA---AVHGEL--LDYLAGLGRSVHMVV 243
                                                                                                                                                                                                                                                                                           167 LIGAVMAEARLRDSPVRVVTCRQSG-----VGDTGDDVRASLDRWLARWQPRYPDVRVQ 220
                                                                                                                                                                                                                                                                                                                                                       463 AIGVLGLTDQLRPDAVESVAAMAALTAAPPVLLTGDN----GR-AAWRVARNAGITDVRA 517
                                                                                                                                                                                                                                                                                                                                                                                                        108 CVGAIGV-HHFRPERVGSTAAALALSAQCPVAIVRPHRVPIGRDAAWIVVEADGSSDIGV 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         345 ALDKTGTLTRGIP--RLASVAPLDPNVVDARRLLQLAAAAEQSSEHPLGRAIVAEARRRG 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        403 IAIPPAKDFRAVPGCGVHALVGNDFVĖTASPQSYRGAPLAELAPLLSAGATAAIVLLDGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 119 LLAETLAGMCARYPEVRVERSTVHG 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            82 VKVE------VEITQER-----PVTSLIRASAAAAL-----V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27 AVDEAA--SRDIPLRLLYAIEPDDPGYAAHGAAARKLAAAENAVRYAF---TAVEAADRP 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62
                                                                                                                TADGVTIRDELHTIPTIIGLARQARRVV 597
                                                                                                                                                                                                                                       AL------LPEQKVEVVRNLQAGGHQVLLVGDGVNDAPAMAAARAAVAMGAGADLTLQ 569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SLDRWLARWQPRYPDVRVQSAAVHG 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SAAGAAAVRLPGDFRAGCGHHRRARLDGLERADAA---SPRRETEPYACEPGMLAAEEGR 118
                              2006, 05:26:27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         66;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                           462
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OM protein - protein search, using sw model

Run on: March 23, 2006, 04:56:43; Search time 71.3577 Seconds (without alignments) 2758.529 Million cell updates/sec

US-10-617-038-21 1410 1 MNQSHKPPSIVVGIDGSKPA.....GNAVLQEAGCTLLVVGQQYL 279

Title: Perfect score: Sequence:

Scoring table: BLOSUM62 Gapop 10.0 , Gapext 0.5

Searched: 2166443 seqs, 705528306 residues

Total number of hits satisfying chosen parameters: 2166443

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :

UniProt\_05.80:\*
1: uniprot\_sprot:\*
2: uniprot\_trembl:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

# SUMMARIES

| 33000000000000000000000000000000000000   | Result<br>No.  |
|--|----------------|
| 1410<br>431.5<br>431.5<br>416.6<br>374.5<br>225.7<br>225.7<br>211.5<br>211.5<br>211.5<br>211.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201.5<br>201 | Score          |
| 100.0<br>100.0<br>30.6<br>30.6<br>29.5<br>26.5<br>16.2<br>16.2<br>15.2<br>15.2<br>15.2<br>14.8<br>14.7<br>14.8<br>14.7<br>14.8<br>14.7<br>14.8<br>14.7<br>14.8<br>14.7<br>14.8<br>14.7<br>14.8<br>14.7<br>14.8<br>14.7<br>14.8<br>14.7<br>14.8<br>14.8<br>14.8<br>14.8<br>14.8<br>14.8<br>14.8<br>14.8   | Query<br>Match |
| 279<br>279<br>268<br>268<br>277<br>277<br>277<br>277<br>277<br>277<br>277<br>277<br>277<br>27  | Length         |
| 00000000000000000000000000000000000000   | BB             |
| Q7TZ44 MYCBO Q53474 MYCTU Q7TX6 MYCTU Q7TX76 MYCBO P95192 MYCTU Q7TY74 MYCBO Q7TY74 MYCBO Q7TY74 MYCBO Q7TY75 MYCPA Q7RIZE STRCO Q73Z49 MYCPA Q7RIZE STRCO Q73Z62 MYCPA Q7TY75 MYCPA Q7TY75 MYCPA Q7TY75 MYCPA Q7TZ45 MYCBO Q73Z62 MYCPA Q7TZ45 MYCBO Q73Z62 MYCPA Q7TZ45 MYCBO Q73Z62 MYCCBO Q73Z62 MYCCBO Q73Z62 MYCCBO Q73Z62 MYCCBO Q73Z62 MYCCPA Q82NM7 STRAW Q82NM7 STRAW Q82NM7 STRAW Q5YVAN NOCFA Q82NG7 COREFA Q87TS4 NOCFA Q87TS4 NOCFA Q87TS7 NOCFA  | ID             |
| Q7tz44 mycobacteri<br>Q53474 mycobacteri<br>Q7tx68 mycobacteri<br>P95192 mycobacteri<br>O7ty74 mycobacteri<br>O76198 mycobacteri<br>P64921 mycobacteri<br>P64921 mycobacteri<br>Q7wz49 nonomuraea<br>Q73z49 mycobacteri<br>Q7ty75 mycobacteri<br>Q7ty75 mycobacteri<br>Q7ty75 mycobacteri<br>Q7ty89 mycobacteri<br>Q7tz45 mycobacteri<br>Q7tz45 mycobacteri<br>Q7tz45 mycobacteri<br>Q7tz45 mycobacteri<br>Q8znk3 streptomyce<br>Q8znk3 streptomyce<br>Q8znk7 mycobacteri<br>Q9riy4 streptomyce<br>Q8znk7 mycobacteri<br>Q9riy5 streptomyce<br>Q8znk7 mycobacteri<br>Q9riy6 streptomyce<br>Q8znk7 mycobacteri<br>Q9riy6 streptomyce<br>Q8znk7 mycobacteri<br>Q8znk7 mycobacteri<br>Q8znk7 streptomyce<br>Q8znk7 mycobacteri<br>Q8znk7 mycobacteri<br>Q8znk7 mycobacteri<br>Q5yy67 nocardia fa<br>Q6a8y6 propionibac<br>Q4jy55 corynebacte  | Description    |

| δ <u>β</u>                              | ş 8                                     | 유 성  | 4a<br>4b  | 4a<br>4o  |  | SOR  |  | 3 5 5 5   | R R R R  | P R R   | R R R   | 2888   | 88  | G D D D  | a d A                                    | RE<br>Q7  |            |  |  |  |   |   |                               |
|---|---|--|---|---|--|--|--|---|--|---|---|--|---|--|--|---|------------|--|--|--|---|---|-------------------------------|
| 241 MVVLSASDQEHVEQLVGAPGNAVLQEAGCTLLVVG | 181 PVRVVTCRQSGVGDTGDDVRASLDRWLARWQPRYP | Qy 121 RVGSTAAALALSAQCPVAIVRPHRVPIGRDAAMIVVEADGSSDIGVLLGAVMAEARLRD | Qy 61 LAAAENAVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAAA | OY 1 MNOSHKPPSIVVGIDGSKPAVQAALMAVDEAASRDIPLRLLYAIEPDDPGYAAHGAAARK | Query Match 100.0%; Score 1410; DB 2; Length Best Local Similarity 100.0%; Pred. No. 7.5e-102; Matches 279; Conservative 0; Mismatches 0; Indels | DR PRINTS; PRO1436; UNVRSLSTRESS.  DR PRINTS; PRO1436; UNVRSLSTRESS.  KW Complete proteome; Hypothetical protein.  SQ SEQUENCE 279 AA; 29441 MW; 52F240F9FE466AC9 CRC64; | DR InterPro; IPR006016; UspA.  DR InterPro; IPR006016; UspA. | RL proc. Nat1. Acad. Sci. U.S.A. 100:7877-7882(2003).  RL proc. Nat1. Acad. Sci. J.S.A. 100:7877-7882(2003).  REMBL; BX240341; CAD96906.1; -; Genomic DNA.  DR GO. GO.0006950. P.PERSTORE TO STEERS: TRA.  DR GO. GO.0006950. | rris B., Atkin R., Doggett J., Mayes R., I<br>rkhill J., Barrell B.G., Cole S.T., Gordon<br>be complete genome sequence of Mycobacter: | DLINE-22709107; PubMed=12788972; DOI=10.10 irnier T., Eiglmeier K., Camus JC., Medii ror M. Duthov S. Grondin S. Lacroix C. | RN [1] RP MUCLEOTIDE SEQUENCE. RC STRAIN=AF2122/97; | <pre>OC Corynebacterineae; Mycobacteriaceae; Mycobacterium; OC Mycobacterium tuberculosis complex. OX NCBI_TaxID=1765;</pre> | <pre>cobacterium bovis.<br/>cteria; Actinobacteria; Actinobacteridae;</pre> | DT 01-VC1-2003 (Irambiret. 25) hast sequence update) DT 01-MAR-2004 (TrEMBirel. 26, Last annotation update) DE Hypothetical protein Mb2053c. GN OrderedLocusNames=Mb2053c; | TZ44;<br>-OCT-2003 (TrEMBLrel. 25, Creat | RESULT 1<br>Q7TZ44 MYCBO<br>ID Q7TZ44_MYCBO PRELIMINARY; PRT; 279 AA. | ALIGNMENTS | 43 146.5 10.4 284 2 Q4NL15_9MICC<br>44 139.5 9.9 289 2 Q4NE71_9MICC<br>45 138 9.8 159 2 Q4NDE9_9MICC | 15/ 11:1 34:1 4 0000/2_B1FUO<br>154 10:9 345:2 Q8G3U1_BTELO<br>148 10:5 151 2 Q4NGW3 9MICC | 170.5 12.1 288 2 Q9RI48_STRCO<br>167.5 11.9 144 2 Q4NDF1_SMICC | 180 12.8 300 2 Q5NEJT CORDI<br>180 12.8 300 2 Q5NEJT CORDI<br>171 12.1 312 2 Q9K4L5_STRCO | 182.5 12.9 317 1 Y1996 MYCTU 182.5 12.9 317 1 Y2019 MYCBO 180.5 12.8 301 2 CORTAK STRCO | 183.5 13.0 300 2 Q9K4H8_STRCO |
| 7                                       | DVRVQSAAVHGELLDYLAGLGRSVH 240           | GVLLGAVMAEARLRDS 180   | LIRASAAAALVCVGAIGVHHFRPE 120<br>                    | EPDDPGYAAHGAAARK 60<br>        <br>EPDDPGYAAHGAAARK 60            | gth 279;<br>els 0; Gaps 0;   | •  |  | •   | eeler F<br>on R.G.   | 26100;<br>H.,<br>Simon  |   |  | etales;   |  |  |   |            | Q4nl15 arthrobacte<br>Q4ne71 arthrobacte<br>Q4nde9 arthrobacte                                       | bifidobact<br>arthrobact   | arthrobact   | corynebact<br>streptomyc  | mycobacter<br>mycobacter  | streptomyo                    |

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OS3474; Q7D7L5;
O1-JUN-1998 (TrEMBLrel. 06, Created)
O1-JUN-1998 (TrEMBLrel. 06, Last sequence update)
O1-JUN-1998 (TrEMBLrel. 31, Last annotation update)
13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
Hypothetical protein (Universal stress protein family)
OrderedLocusNames=MT2087, Rv2028c;
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STRAIN=CDC 1551 / Oshkosh;

MEDLINE=22206494; PubMed=12218036;

MEDLINE=22206494; PubMed=12218036;

DOI=10.1128/JB.184.19.5479-5490.2002;

Fleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O., Peterson J.D., DeBoy R.T., Dodson R.J., Gwinn M.L., Haft D.H., Heterson J.D., Colonay J.F., Nelson W.C., Umayam L.A., Ermolaeva M.D., Salzberg S.L., Delcher A., Utterback T.R., Weidman J.F., Khouri H.M., Salzberg S.L., Delcher A., Utterback T.R., Weidman J.F., Khouri H.M., Gill J., Mikula A., Bishai W., Jacobs W.R. Jr., Venter J.C., Fraser C.M.;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              labozatory strains.";
J. Bacteriol. 184:5479-5490(2002).
EMBL; BX842578; CAA17242.1; -; Gen
EMBL; AE000516; AAK46366.1; -; Gen
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PRINTS; PR01438; UNVRSLSTRESS.
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TIGR; MT2087; -.
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InterPro; IPR006016; UspA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                 proteome; Hypothetical protein.
279 AA; 29441 MW; 52F240F9FE466AC9 CRC64;
                                                                                                                                                                                            MNQSHKPPSIVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEPDDPGYAAHGAAARK
                                                                  <u>LAAAENAVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAAALVCVGAIGVHHFRPE</u>
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Pred. No. 7.5e-102;
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MEDLINS=22709107; PubMed=12788972; DOI=10.1073/pnas.1130426100;
MEDLINS=22709107; PubMed=12788972; DOI=10.1073/pnas.1130426100;
Garnier T., Eiglaneier K., Camus J.-C., Medina N., Mansoor H.,
Garnier T., Eiglaneier K., Camus J.-C., Medina N., Mansoor H.,
Pryor M., Duthoy S., Grondin S., Lacroix C., Monsempe C., Simon S.,
Harris B., Atkin R., Doggett J., Mayes R., Keathig L., Wheeler P.R.,
Parkhill J., Barrell B.G., Cole S.T., Gordon S.V., Hewinson R.G.;
"The complete genome sequence of Mycobacterium bovis.";
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01-OCT-2003 (TrEMBLrel. 25, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
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Q7TX68;
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LAANAKPGQLFV---ADSHSAHELCGAYQPGCAVL
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4; Mismatches 105
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RESULT 4
P95192\_MYCTU
ID P95192\_MYCTU

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A Harris D.E., Gordon S.V., Biglmeier K., Gas S., Barry C.E. III, RA Tekala F., Badcock K., Basham D., Brown D., Chillingworth T., RA Connor R., Davies R.M., Devlin K., Fellwell T., Gentles S., Hamlin N., RA Holroyd S., Hornsby T., Jagels K., Krogh A., McLean J., Moule S., RA Murphy L.D., Oliver S., Osborne J., Quall M.A., Rajandream M.A., RA Rogers J., Rutter S., Seeger K., Skelton S., Squares S., Squares R., RA Sulston J.E., Taylor K., Whitehead S., Barrell B.G.; Tocomplete genome sequence.";
L. Nature 393:537-544(1998).
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STRAIN=CDC 1551 / Oshkosh;

MEDLINE=22206494; PubMed=12218036;

MEDLINE=22206494; PubMed=12218036;

DOI=10.1128/JB.184.19.5479-5490.2002;

Pleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O.,

Peterson J.D., DeBoy R.T., Dodson R.J., Gwinn M.L., Haft D.H.,

Hickey E.K., Kolonay J.F., Welson W.C., Umayam L.A., Ermolaeva M.D.,

Salzberg S.L., Delcher A., Utterback T.R., Weidman J.F., Khouri H.M.

Gill J., Mikula A., Bishai W., Jacobs W.R. Jr., Venter J.C.,
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01-MAY-1997 (TrEMBLrel. 03, Last sequence update)
13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
Hypothetical protein (Universal stress protein family).
OrderedLocusNames-MT3220, Rv3134c;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GO; GO:0006950; P:response to Interpro; IPR006015; Usp. Interpro; IPR006016; UspA. Pfam; PF00582; Usp; 1. PRINTS; PR01438; UNVRSISTRESS.
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EMBL; AE000516; AAK47558.1;
PIR; G70645; G70645.
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J. Bacteriol. 184:5479-5490(2002).
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium;
Mycobacterium tuberculosis complex.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TubercuList; Rv3134c; -.
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                                                                                                                                               RVGSTAAALALSAQCPVAIVRPH--RVPIGRDAAWIVVEADGSSDIGVLLGAVMAEARLR 178
                                                                                                                                                                                                                                                                                                                                                                                             MNQSHKPPSIVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEPDDPGYAAHGAAARK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        proteome;
268 AA;
GVPLRAVAVH----AAETPDDVEQGSRLAHVHLSRRLAHWTRLYPEVRVDRAIAGGSACRH
                                                        DSPVRVVTCRQSGVGDTGDDV-----RASLDRWLARWQPRYPDVRVQSAAVHGELLDY
                                                                                                                                                                                                                                          -SAARAALHDASRKVEATGQPVKIETEVLCGRPLTKLMQESRSAAMLCVGSVGLDHVRGR
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28008 MW; EE2CB4F9C9D602AE CRC64;
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                        OO6188_MYCTU PRELIMINARY; PRT; 272 AA.
006188; Q7D6V6;
01-JUL-1997 (TTEMBLrel. 04, Created)
01-JUL-1997 (TTEMBLrel. 04, Last sequence update)
13-SEP-2005 (TTEMBLE1. 31, Last annotation updat
Hypothetical protein (Universal stress protein fa
OrderedLocusNames=MT2699; Rv2624c;
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Q7TY74;
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Corynebacterineae; Mycobacteriaceae; Mycobacterium;
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InterPro; IPR006016; UspA.
Pfam; PF00582; Usp; 2.
PRINTS; PR01438; UNVRSLSTRESS.
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36.8%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; BX842580; CAB08618.1; EMBL; AE000516; AAK47015.1; PIR; G70572; G70572.
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Fleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O.,
Peterson J.D., DeBoy R.T., Dodson R.J., Gwinn M.L., Haft D.H.,
Hickey E.K., Kolonay J.F., Nelson W.C., Umayyam L.A., Ermolaeva M.D.,
Salzberg S.L., Delcher A., Utterback T.R., Weidman J.F., Khouri H.M.
Gill J., Mikula A., Bishai W., Jacobs W.R. Jr., Venter J.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TubercuList; Rv2624c; -. GO; GO:0006950; P:response InterPro; IPR006015; Usp. InterPro; IPR006016; UspA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         laboratory strains.";
J. Bacteriol. 184:5479-5490(2002).
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Fraser C.M.;
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STRAIN=CDC 1551 / Os
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Pred. No. 2.6e-24;
6; Mismatches 116
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Y2005 MYCTU STANDARD; PRT; 295
P64921; Q10851;
01-CCT-1996 (Rel. 34, Created)
25-CCT-2004 (Rel. 45, Last sequence upda
10-MAY-2005 (Rel. 47, Last anotation up
Hypothetical protein Rv2005c/MT2061.
OrderedLocusNames=Rv2005c, MT2061; ORFNa
Cole S.T., Brosch R., Parkhill J., Garnier T., Churcher C.M., Harris D.B., Gordon S.V., Eiglmeier K., Gas S., Barry C.B. III, Tekaia F., Badcock K., Basham D., Erown D., Chillingworth T., Connor R., Davies R.M., Devlin K., Feltwell T., Gentles S., Hamlin Holroyd S., Hornsby T., Jagels K., Krogh A., McLean J., Moule S., Murphy L.D., Oliver S., Osborne J., Quail M.A., Rajandream M.A.,
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Submitted (SEP-2003) to the EMBL/Genbank/DDBJ da
EMBL; AE017238; AAS05727-1; -; Genomic DNA.
GO; GO:0006950; P:response to stress; TEA.
                                                                                     STRAIN=H37Rv;
MEDLINE=98295987; PubMed=9634230;
                                                                                                                                                                        Corynebacterineae; Mycobacteriaceae;
                                                                                                                                                                                    Mycobacterium tuberculosis.
Bacteria; Actinobacteria; A
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterinese; Mycobacteriaceae; Mycobacterium;
Mycobacterium avium complex (MAC).
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05-JUL-2004 (TrEMBLrel.
05-JUL-2004 (TrEMBLrel.
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Q73V37;
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                                                                                                                                                        Mycobacterium tuberculosis
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                                                                                                               SCALE GENOMIC
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                                                                                     DOI=10.1038/31159;
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RESULT 9
Y2028 MYCBO STANDARD;
ID Y2028 MYCBO STANDARD;
AC P64922; Q10851;
AC P64927; Q10851;
Created)
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; BX842578; CAA98383.1;
EMBL; AE000516; AAK46338.1;
PIR; C70759; C70759.
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MEDLINE=22206494; PubMed=12218036;
DOI=10.1128/JB.184.19.5479-5490.2002;
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TubercuList; Rv2005c;
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[2]
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Pro; IPR006016; UspA.
Pr00582; Usp; 2.
S; PR01438; UNVRSLSTRESS.
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393:537-544(1998).
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Pred. No. 7.2e-12;
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Q7WZ49;
01-OCT-2003 (TrEMBLrel. 2
01-OCT-2003 (TrEMBLrel. 2
01-MAR-2004 (TrEMBLrel. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=22709107; PubMed=12788972; DOI=10.1073/pnas.1130426100 Garnier T., Eiglmeter K., Camus J.-C., Medina N., Mansoor H., Pryor M., Duthoy S., Grondin S., Lacroix C., Monsempe C., Simo: Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler Parkhill J., Barrell B.G., Cole S.T., Gordon S.V., Hewinson R. "The complete genome sequence of Mycobacterium boy." Proc. Natl. Acad. Sci. U.S.A. 100:7877-7882(2003).
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10-MAY-2005 (Rel. 47, Last annotation update)
Hypothetical protein Mb2028c.
OrderedLocusNames=Mb2028c;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam, PF00582; Usp; 2.
PRINTS; PR01438; UNVRSLSTRESS.
Complete proteome; Hypothetical
SEQUENCE 295 AA; 30985 MW; (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This Swiss-Prot entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EM the European Bioinformatics Institute. There are no restruse as long as its content is in no way modified and this s
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
    Nonomuraea sp.
                        Hypothetical protein
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Monsempe C., Simon
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                                                                                                     Li L., Bannantine J., Zhang Q., Amonsin A., Alt D., Kapu Submitted (SEP-2003) to the EMBL/GenBank/DDBJ databases. EMBL; AE017233; AASO4071.1; -; Genomic DNA. GO; GO:0006950; P:response to stress; IEA. InterPro; IPR006015; Usp. InterPro; IPR006015; UspA.
                                                                                                                                                                                                                                                                                                                                                                                          Mycobacterium paratuberculosis.
Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales; Corynebacterineae; Mycobacteriaceae; Mycobacterium;
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  Complete proteome. SEOUENCE 294 AA;
                                                      Pfam; PF00582; Usp; 2. PRINTS; PR01438; UNVRSLSTRESS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hypothetical protein.
OrderedLocusNames=MAP1754c;
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NCBI_TaxID=93944;
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L; AJ561198; CAD91237.1; -;
GO:0006950; P:response to
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01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
11-MAR-2004 (TrEMBLrel. 26, Last annotation update)
12-MAR-2004 (TrEMBLrel. 26, Last annotation update)
13-MAR-2004 (TrEMBLrel. 13, Created)
14-MAY-2000 (TrEMBLrel. 13, Created)
15-MAY-2000 (TrEMBLrel. 13, Created)
16-MAY-2000 (TrEMBLrel. 13, Last sequence update)
16-MAY-2000 (TrEMBLrel. 13, Last sequence update)
16-MAY-2000 (TrEMBLrel. 13, Last sequence update)
16-MAY-2004 (TrEMBLrel. 13, Last sequence update)
17-MAR-2004 (TrEMBLrel. 13, Last sequence update)
18-MAY-2004 (TrEMBLrel. 13, Last sequence upda
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SEQUENCE 294 AA; 31013 MW; 2
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Nature 417:141-147(2002).
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4; Mismatches 147
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Q73Z62;
Q73Z62;
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Submitted (SEP-2003) to the EMBL/GenBank/DDBJ databases.
EMBL; AE01723; AAS04058.1; -; Genomic DNA.
GO; GO:0006950; P:response to stress; TEA.
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium;
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NCBI_TaxID=1770;
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OrderedLocusNames=MAP1741c;
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05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
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                                                 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31246 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15.2%; Score 214.5;
28.0%; Pred. No. 1.56
tive 47; Mismatches
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RESULT 15

O06189 MYCTU PRELIMINARY; PRT; 297 AA.

ID O06189 (7D6V7;
AC O06189; Q7D6V7;
DT 01-UUL-1997 (TrEMBLrel. 04, Created)
DT 01-UUL-1997 (TrEMBLrel. 04, Last sequence update)
DT 13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
DT 13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
DT Hypothetical protein TB31.7 (Universal stress protein
GN Name-TB31.7; OrderedLocusNames=MT2698, Rv2623;
OS Mycobacterium tuberculosis.

OC Bacteria; Actinobacteria; Actinobacteridae; Actinomyce
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Best Local S
Matches 84
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OTTY75 MYCBO PRELIMINARY;

OTTY75;

OTTY75;

O1-OCT-2003 (TremBirel, 25,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=22709107; PubMed=12788972; DOI=10.1073/pnas.1130426100; Garnier T., Eiglmeier K., Camus J.-C., Medina N., Mansoor H., Pryor M., Duthoy S., Grondin S., Lacroix C., Monsempe C., Simon Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler I. Parkhill J., Barrell B.G., Cole S.T., Gordon S.V., Hewinson R.G. "The complete genome sequence of Mycobacterium bovis."; Proc. Natl. Acad. Sci. U.S.A. 100:7877-7882(2003).

EMBL, BX248343; CAD94841.1; -; Genomic DNA.

GO; GO:0006950; P:response to stress; TEA.

InterPro; IPR006015; Usp.

InterPro; IPR006015; UspA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE 297 AA;
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01-OCT-2003 (TrEMBLrel. 25, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last annotation updat
Hypothetical protein TB31.7.
Name=TB31.7; OrderedLocusNames=Mb2656;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mycobacterium tuberculosis NCBI_TaxID=1765;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRINTS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pram;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN=AF2122/97;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
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S; PR01438; UNVRSLSTRESS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LRWQQDHG------RHLIDDALKVVEQASLRAGPPTVHSEIVPAAAVPTLVDMSKDA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AA----HGAAARKLAAAENAVRYAFTAVEAAD---RPVKVEVEITQERPVTSLIRASAAA
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     Actinobacteridae; Actinomycetales;
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Pred. No. 1.6e-08;
7; Mismatches 134
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L., Wheeler P.R.,
Hewinson R.G.;
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Query Match
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Matches 84
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STRAIN=CDC 1551 / Oshkosh;

MEDLINE=22206494; PubMed=12218036;

MEDLINE=22206494; PubMed=12218036;

DOI=10.1128/JB.184.19.5479-5490.2002;

Fleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O.,

Peterson J.D., DeBoy R.T., Dodson R.J., Gwinn M.L., Haft D.H.,

Hickey E.K., Kolonay J.F., Nelson W.C., Umayam L.A., Ermolaeva M.D.,

Salzberg S.L., Delcher A., Utterback T.R., Weidman J.F., Khouri H.M.,

Salzberg Mikula A., Bishai W., Jacobs W.R. Jr., Venter J.C.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   laboratory strains.";
J. Bacteriol. 184:5479-5490(2002).
J. Bacteriol. 184:5479-5490(2002).
EMBL; BX842580; CAB08619.1; -; Genomic_DNA.
EMBL; AE000516; AAX47014.1; -; Genomic_DNA.
EMBL; F70572; F70572.
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Fraser C.M.;
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NCBI_TaxID=1773;
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PRINTS; PR01438; UNVRSLSTRESS.
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QEAGCTLLV 273
                                                       RLAGWOERYPNVAITRVVVRDQPARQLVQRSEEAQLVVVGSRGRGGYAGMLVGSVGETVA
                                                                                       WLARWQPRYPDVRVQSAAVHGELLDYLAGLGRSVHMVVLSASDQ-EHVEQLVGAPGNAVL
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27.2%;
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Pred. No. 1.6e-08;
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QLARTPVIV 291

Search completed: March 23, 2006, 05:24:15 Job time: 73.3577 secs

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Result
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Maximum Match 100%
Listing first 45 summaries
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Perfect score:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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 106.5
105.5
102.1
102.5
100.5
99.5
99.5
98.5
96.5
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1: /cgn2 6/ptodata/1
2: /cgn2 6/ptodata/1
3: /cgn2 6/ptodata/1
4: /cgn2 6/ptodata/1
5: /cgn2 6/ptodata/1
6: /cgn2_6/ptodata/1
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US-09-602-787A-54
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US-09-602-787A-50
US-09-602-787A-50
US-09-602-787A-50
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US-09-252-991A-20291
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US-09-351-150A-19
US-09-351-150A-19
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Sequence 27251, A
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                                                        e 13, Apple 28897, Apple 28897, Apple 554, Apple 63, Apple 63, Apple 62281, Apple 62281, Apple 623334, Apple 623334, Apple 623334, Apple 623334, Apple 62, A
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| 2 US-09-252-991A-30569 2 US-09-902-540-16383 2 US-09-9252-991A-30569 2 US-09-92540-15067 2 US-09-925-759-151 2 US-09-758-759-151 2 US-09-758-759-151 2 US-08-095-734-2 1 US-08-444-623-2 1 US-08-471-869-2 2 US-09-342-563-2 2 US-09-342-563-2 2 US-09-91A-2215 2 US-09-252-991A-20194 2 US-09-252-991A-20194 2 US-09-252-991A-20194 2 US-09-252-991A-19349 1 US-09-252-991A-19349 2 US-09-252-991A-19349   | S Sequence  | 3567             | 3567             | 407                  | 569                  | 426                 | 293                  | 1271             | 1271            | 1271            | 1271            | 1271   | 628                  | 613               | 367                 | 735                  | 659                 | 655                  | T7/T              |
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|   |  | US-08-439-009A-4 | US-07-642-734C-4 | US-09-252-991A-19349 | US-09-252-991A-20194 | US-09-902-540-11847 | US-09-252-991A-22215 | PCT-US94-08267-2 | US-09-342-563-2 | US-08-471-869-2 | US-08-444-623-2 | US-08-095-734-2                              | US-09-252-991A-29296 | US-09-758-759-151 | US-09-902-540-15067 | US-09-252-991A-30569 | US-09-902-540-16383 | US-09-252-991A-31645 | 00" TO-044-000V-0 |

### ALIGNMENTS

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APPLICANT: Kroger, Burkhard
APPLICANT: Kroger, Burkhard
APPLICANT: Schroder, Hartwig
APPLICANT: Schroder, Hartwig
APPLICANT: Schroder, Gregor
ITITLE OF INVENTION: CORYNEBACTERIUM GLUTAMICUM GENES ENCODING NOVEL
ITITLE OF INVENTION: PROTEINS
FILE REFERENCE: BGI-129CP
CURRENT APPLICATION NUMBER: US/09/605,703B
CURRENT FILING DATE: 2000-06-27
PRIOR APPLICATION NUMBER: 60/142,764
PRIOR APPLICATION NUMBER: 60/142,764
PRIOR APPLICATION NUMBER: 60/152,318
PRIOR APPLICATION NUMBER: 60/152,318
PRIOR FILING DATE: 1999-09-03
NUMBER OF SEQ ID NOS: 2934
SEQ ID NO 1870
LENGTH: 301
TYPE: PRT
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Patent No. 6962989
GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
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                                                                                                                                                                                                                 118 RPERVGSTAAALALSAQCPVAIVRPHRVPIGRDAAW--IVVBADGSSDIGVLLGAVMAEA 175
                                                                                                                                                                            120
239 KIITRDRPVRALAEASENAQLLVVGSHGRGGFKGMLLGSTSRALLQSAPCPMMVV
                                                                                                                                                                                                                                                                 67
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77; Conserv
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                                                                                                                              RLR------DSPVRVVTCRQSGVGDTGDDV-RASLDRWLARWQP---RYPDVRVQ 220
                                         SAAVHGELLDYLAGLGRSVHMVVLSASDQEHVE-QLVGAPGNAVLQEAGCTLLVV 274
                                                                                                                                                                            SGMVMGSVSGAVVSHAKCPVVVVKEDSA-VNEDSKYGPVVVGVDGSEVSQQATEYAFAEA 178
                                                                                       EARGAELVAVHTWMDMQVQASLAGLAAAQQQWDEVERQQTDMLIERLAPLVEKYPSVTVK
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Pred. No. 8.2e-14;
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CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 27251
LENGTH: 815
TYPE: PRT
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; SEQ ID NO 14
; LENGTH: 3562
; TYPE: PRT
; ORGANISM: Micromonospora megalomicea
US-09-679-279-14
                                                                                                                                                                                                                                                                                                                                                       US-09-252-991A-27251
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US-09-679-279-14
                                                                                                                                                                                                                                                                                     Sequence 27251, Application US/09252991A Patent No. 6551795
GENERAL INFORMATION:
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TITLE OF INVENTION: Recombinant Megalomicin Biosynthetic
TITLE OF INVENTION: Genes and Uses Thereof
FILE REFERENCE: 300622004700
CURRENT APPLICATION NUMBER: US/09/679,279
CURRENT FILING DATE: 2000-10-04
                                                                                                                                                                                                        APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: US 60/158,305
PRIOR FILING DATE: 1999-10-08
PRIOR APPLICATION NUMBER: US 60/190,024
PRIOR FILING DATE: 2000-03-17
NUMBER OF SEQ ID NOS: 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: McDaniel, Robert APPLICANT: Volchegursky, Ya
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PVPDG----WRAVDAAAVPIAFTTAHYALHDLAGLQAGQSVLVHAAAGGVGMAAVALARR
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; TYPE: PRT ; ORGANISM: Micromonospora megalomicea US-09-679-279-13
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US-09-252-991A-27251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-679-279-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: Fas:
SEQ ID NO 13
LENGTH: 3546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 87; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Patent No. 6524841
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local (
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CURRENT FILING DATE: 2000-10-04
PRIOR APPLICATION NUMBER: US 60/158,305
PRIOR FILING DATE: 1999-10-08
PRIOR APPLICATION NUMBER: US 60/190,024
PRIOR FILING DATE: 2000-03-17
NUMBER OF SEQ ID NOS: 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: McDaniel, Robert
APPLICANT: Volchegursky, Yanina
TITLE OF INVENTION: Recombinant
TITLE OF INVENTION: Genes and Us
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILE REFERENCE:
                                                                                                                                                                                                                               1425 PFORERFWLEPNPARRVADSDDVSSLRYRIEWHPTDPGEPGRLDGTWLLATYPGRADDRV 1484
                                                                                                                                      1485 EAARQALESAG--ARVEDLVVEPRTGRVDLVRRLDAVGPVAGVLCLFAVA----EPAAEH 1538
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          191 GVGDTGDDVRASLDRWLARWQPRYPDVRVQSAAV-HG------ELLDY---LAGLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         293 SLEPLAAAAALAGLAPARGGGRWRRLAQALLAVLGTGAVPVLHLRRQRPLDLRAARPAGP
                                                                                                                                                                                                                                                                            19 PAVQAALWAVDEAASR----DIPLRLLYAIE--PDDPGYAAHGAAARKLAA----AENAV
                                                                                                                                                                                                                                                                                                                            81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 SHKPPSIVVGIDGSKPA-----VQAALWAVDEAASRDIPLRL-----LYAIEPDDP
                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FastSEQ for Windows Version
                                             SPLAVTSLSDTLDLTQAVAGSGRECPIWVVTENAVAVGPFERLRDPAHGALWALGRVVAL 1598
                                                                                             STAAALALS----
                                                                                                                                                                                 RYAFTAVEAADRPVKVEVEITQERP-----VTSLIRASAAAALVCVGAIGVHHFRPERVG 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APALALPAAGGTVPAMPGRGAAWLRL----PRPVGAVAG-TRADARVVAAGVRA-----A
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GY----AAHGAAARKLAAAEN-----AVRYAFTAVEAADRPVKVEVEITQERPVT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ----PHRVPI--GRDAAWIVVEADGSSDIGVLLGAVMAEARLRDSPVRVVTCRQS 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Application US/09679279
                                                                                                                                                                                                                                                                                                                            Conservative
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                                                                                                                                                                                                                                                                                                           7.6%; 5c.
23.9%; Pre
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-ADGSSDIGVLL-GAVMAEARLR-DSPVRVVTCRQSGVGDTGDD 198
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                                                                                        ----AQCPVAIVRPHRVPIG----RD----AAW----IVV 156
                                                                                                                                                                                                                                                                                                                                               Score 106.5; I Pred. No. 0.18;
                                                                                                                                                                                                                                                                                                                            Mismatches
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                                                                                                                                                                                                                                                                                                                                                                     DB 2;
                                                                                                                                                                                                                                                                                                                            120;
                                                                                                                                                                                                                                                                                                                            Indels 105;
                                                                                                                                                                                                                                                                                                                                                                       Length 3546;
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US-09-252-991A-28897

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FILE REFERENCE: 2709.2004001

CURRENT APPLICATION NUMBER: US/09/489,039A

CURRENT FILING DATE: 2000-01-27

PRIOR APPLICATION NUMBER: US 60/117,747

PRIOR FILING DATE: 1999-01-29

NUMBER OF SEQ ID NOS: 14342

SEQ ID NO 9821

LENGTH: 426

TYPE: PRT

ORGANISM: Klebsiella pneumoniae
                                                                                                                                                                                                                                                                                                                                                                             US-09-252-991A-28897; Sequence 28897; App
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US-09-489-039A-9821
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                                                            PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 28897
                                                                                                                                                                                                                                                                                                                                 Patent No. 6551795
GENERAL INFORMATION:
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APPLICANT: Gary Br
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Best Local
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                                                                                                                                                                        CURRENT APPLICATION NUMBER: US/09/252,991A CURRENT FILING DATE: 1999-02-18 PRIOR APPLICATION NUMBER: US 60/074,788
                                                                                                                                                                                                                                                              APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Gary Breton et. al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO
TITLE OF INVENTION: PREUMONIAE FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                              FILE REFERENCE:
ORGANISM: Pseudomonas aeruginosa
                       LENGTH: 458
TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         53; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WQVKKIDSTLRGNPGGELEAMMAAQGCRMAVVAPAYPAAGRHT-----RDGRCYVH---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FRPERVGST-----AAALALSAQCPVAIVRPHRVPIGRDAAWIVVEADGSSDIGVLL 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GVPLDQTEFASDPKTPVS---
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PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 21798
LENGTH: 1650
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 21798, Apparent No. 655179
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: MARC J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING
TITLE OF INVENTION: ABRUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                    7.2%;
Local Similarity 23.5%;
es 87; Conservative
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                         1364 GHVAGQPHPHAL-LGADQADRPGVHPAQRRAVDRQLWLLAAIGGARRGLQAVGLDVVAAG 1423
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                                                                                                                                                                                                                                                                                                                                   10 IVVGID-GSKPAVQAALWAVDEAASRDIPLRL------LYAIEPDD------
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             85 EVEIT-----QERPV----TSLIRASAAAALVCVGAIGVHHFRPERV---- 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27 AVDEAASRDIPL--RLLYAIEPDDPGYAAHGAAARKLAAAENAVRYAFTAVEAADRPVKV 84
                                                                                                                                                                                                                                                                                     QRLARLRFQRAAGHQÁAGVÁQGAAÁQLÉVÁAGVÁPLVRLDÁGFDHPGVVÉARGVQRDAFA 1300
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATSSATRAFALATSLLYACAAPAASWTASWQASPQPVWAEDFLFPSNVPAELHDQTVRQ 85
                                                              -----RPHRVPIGRDAA-----
                                                                                                               RRQALFVDQFLRAADLGAATGVGLAVQLHGLGRDLQVALAGGLGQAQLAAGVDADVAAAG 1363
                                                                                                                                                        ----RPVTSLIRASAAAALVCVG-AIGVHHF-RPERV----GSTAAALALSAQCPVAIV- 140
                                                                                                                                                                                                                                              -----PGYAAHGAAARKLAAABNAVRYA-FTAVEAA-DRPVKVEVEITQE----
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MBER: US 60/074,788
                                                                                                                                                                                                                                                                                                                                                                                  28; Mismatches 114;
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                                                                                                                                                                                                                                                                                                                                                                                                    Score 102; DB
Pred. No. 0.18;
                                                                     -----WIVVEADGSS-----
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                                                                                                                                                                                                                                                                                                                                                                                  Indels 142;
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US-09-602-787A-54
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APPLICANT: Sch'der, c
APPLICANT: Zelder, c
APPLICANT: Haberhaue
TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Patent No.
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PRIOR APPLICATION NUMBER: USSN 60/141031
PRIOR FILING DATE: 1999-06-25
PRIOR APPLICATION NUMBER: DE 19931454.3
PRIOR FILING DATE: 1999-07-08
PRIOR FILING DATE: 1999-07-08
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CURRENT APPLICATION NUMBER: US/09/602,787A
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                                                                                                                                                                                                                                                                           OR APPLICATION NUMBER: DE 19932128.0

OR FILING DATE: 1999-07-09

OR APPLICATION NUMBER: DE 19932180.9

OR APPLICATION NUMBER: DE 19932182.5

OR APPLICATION NUMBER: DE 19932182.5

OR APPLICATION NUMBER: DE 19932190.6

OR APPLICATION NUMBER: DE 19932191.4

OR FILING DATE: 1999-07-09

OR APPLICATION NUMBER: DE 19932209.0

OR APPLICATION NUMBER: DE 19932209.0

OR APPLICATION NUMBER: DE 19932209.0

OR FILING DATE: 1999-07-09

OR APPLICATION NUMBER: DE 19932212.0

OR FILING DATE: 1999-07-09

OR APPLICATION NUMBER: DE 19932217.9

OR APPLICATION NUMBER: DE 19932227.9

OR APPLICATION NUMBER: DE 19932227.9

OR APPLICATION NUMBER: DE 19932228.7

OR APPLICATION NUMBER: DE 19932228.7
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OR APPLICATION NUMBER: DE 19931563.9
OR APPLICATION NUMBER: DE 19931563.9
OR FILING DATE: 1999-07-08
OR APPLICATION NUMBER: DE 19932122.1
OR FILING DATE: 1999-07-09
OR APPLICATION NUMBER: DE 19932124.8
OR APPLICATION NUMBER: DE 19932124.8
OR APPLICATION NUMBER: DE 19932125.6
OR FILING DATE: 1999-07-09
OR APPLICATION NUMBER: DE 19932125.6
OR FILING DATE: 1999-07-09
                                             APPLICATION NUMBER: DE 19932927.3
FILING DATE: 1999-07-14
APPLICATION NUMBER: DE 19933005.0
FILING DATE: 1999-07-14
APPLICATION NUMBER: DE 19933006.9
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FILING DATE: 1999-07-09
FILING DATE:
APPLICATION N
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        54,
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INVENTION: CORYNBBACTERIUM GLUTAMICUM GENES ENCODING PROTEINS
INVENTION: INVOLVED IN MEMBRANE SYNTHESIS AND MEMBRANE
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Zelder, Oskar
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  NUMBER: DE 19940764.9
                             1999-07-14
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RESULT 9

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US-09-602-787A-50

Sequence 50, Application US/09602787A Patent No. 6696561

GENERAL INFORMATION:

APPLICANT: Pompejus, APPLICANT: Kr"ger,

Mark

Kr"ger, Burkhard Sch"der, Hartwig Zelder, Oskar

APPLICANT: Sch"der, Hatters
APPLICANT: Zelder, Oskar
APPLICANT: Zelder, Oskar
TITLE OF INVENTION: CONYNEBACIERIUM GLUTAMICUM GENES ENCODING PROTEINS
TITLE OF INVENTION: INVOLVED IN MEMBRANE SYNTHESIS AND MEMBRANE
TITLE OF INVENTION: TRANSPORT

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LENGTH: 1277
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FILING DATE: 1999-08-27
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542 GEVRTVTATVNGNLV
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                                                                                                                                                                 106 LVCVGAIGVHHFRPERVGSTAAALALSAQCPVAIVRPHRVPIG-RDAA------WIVVE
                                                                                                                                                                                                      362 KSDVPTDGALKVSATADEVVDTDLGRLVIVRAEIADAEGNLIATLAERFAIRGRKGNAVA 421
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                                                                                                                                                                                                                                                                                                                                                        Similarity
                               PDVRVQSAAVHGELL
                                                                GMWTSAIGELIAGAAFNDEQIQTPAAKVVEYTATMLAPVLPGEEIEFSVERSAVDNRPGM 541
                                                                                              ADGSSDIGVLL-GAVMAEARLRDSPVRVVTCRQSGVGDT--GDDVRASLDRWLARWQPRY 214
                                                                                                                                                                                                                                                                     AHTAPDVLVG--RAWPAVFAAVKSAVIPGTDSASVVEGMLSLV------HLEHHIVL 361
                                                                                                                                 RTNTSALPTTVDTPRSARAVATVVAPESMRPFAVISGDRNPIHVSDVAASLAGLPGVIVH
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Pred. No. 0.21;
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PRIOR APPLICATION NUMBER: DE 19942088.2
PRIOR FILLNG DATE: 1999-09-03
NUMBER OF SEQ ID NOS: 678
EQ ID NO 50
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APPLICATION NUMBER: DE 19933006.9
FILING DATE: 1999-07-14
APPLICATION NUMBER: DE 19940764.9
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APPLICATION NUMBER: DE 19932191.4
FILING DATE: 1999-07-09
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APPLICATION NUMBER: DE 19932128.0
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APPLICATION NUMBER: DE 19941378.9
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FILING DATE: 1999-07-09
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APPLICATION NUMBER: DE 19932190.6
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APPLICATION NUMBER: DE 19932182.5
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APPLICATION NUMBER: DE 19942078.5
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APPLICATION NUMBER: DE 19941379.7
FILING DATE: 1999-08-31
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FILING DATE: 1999-08-27
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: DE 19932125.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
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                                                                                                               APPLICATION NUMBER:
                                                                                                                                       FILING DATE: 1999-09-03
                                                                                                                                                                                                       APPLICATION NUMBER: DE 19942077.7
                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER:
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; LENGTH: 2012
; TYPE: PRT
; ORGANISM: Corynebacterium glutamicum
US-09-602-787A-50
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TYPE: PRT
; ORGANISM: Micromonospora megalomicea
US-10-152-886-63
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APPLICANT: ECOPIA BIOSCIENCES INC.
APPLICANT: Farnet, Chris
APPLICANT: Staffa, Alfredo
APPLICANT: Zazopoulos, Emmanuel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: P
SEQ ID NO 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 63, Appl. Patent No. 691247
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Best Local Similarity
Matches 67; Conserv
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Best Local Similarity
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CURRENT APPLICATION NUMBER: US/10/152,886
CURRENT FILING DATE: 2002-05-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQ ID NOS: 102
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Zazopoulos, Emmanuel
TITLE OF INVENTION: GENES AND PROTEINS INVOLVED IN
                                        1342
                                                                                                                                                                                                                                                                          1213
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                                                                                                                                                                                               1266 RRAVAELTADLGPVTAVLHGAGRNEPAALANLDMGAVR-RTFAPKLDGLSAT------
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                                                                              196
                                                                                                                                                         136 PVAIVRPHRVPIGRDAAWIVVEADGSSDIGVLIGAVMAEARLRDSPVRVVTCRQSGVGDT 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                106 LVCVGAIGVHHFRPERVGSTAAALALSAQCPVAIVRPHRVPIG-RDAA-----WIVVE 157
246 ASDQEHVEQLVGAPGNAVLQ-----EAGCTLLVVGQ 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       215 PDVRVQSAAVHGELL 229
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                                                                                                                                                                                                                                                                                                                23
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                55;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PatentIn version 3.0
                                                                                                                                                                                                                                 VKVEVEITQE-RPVTSLIRAS-----AAAALVCVGAIGVHHFRPERVGSTAAALALSAQC 135
                                                                                                                                                                                                                                                                            ALAMATDSGAS----LALLGRSAPAEDPELAAN---LSRMTAAGVTVRYARADVTDPDQV 1265
                                                                                                                                                                                                                                                                                                              AALWAVDEAASRDIPLRILYAIEP-DDPGYAAHGAAARKLAAAENAVRYAFTAVEAADRP 81
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                                        GEAHYATANDWLA-----
                                                                            GDDVRASLDRWLARWQPRYPDVRVQSAAVHGE-----LLDY--LAGLGRSVHMVVLS 245
                                                                                                                    -LAAVDPDRL----
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                                                                                                                                                                                                                                                                                                                                                                      Score 99.5; DB Pred. No. 0.43;
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Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                        EATTAFGRRHRHCRSLCLEWSVWSGVGMGERLSVVE 1390
                                                                                                                    --RLLVTLGSIIGRAGLR-
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US-09-252-991A-20291
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                                                                                                                                                                                                                                                                                                                                                                                         Sequence 97, Application US/09477962
Patent No. 6927286
GENERAL INFORMATION:
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APPLICANT: DU, LIANG
APPLICANT: SANCHEZ, G
APPLICANT: CHEN, MEI
APPLICANT: EDWARDS, I
SOFTWARE: PatentIn Ver. SEQ ID NO 97
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Best Local Similarity
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SEQ ID NO 20291
LENGTH: 1138
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                                      APPLICANT: EDWARDS, DANIEL J.

TITLE OF INVENTION: BLEOMYCIN GENE CLUSTER COMPONENTS AND THEIR USES FILE REFERENCE: 407T-895820US
CURRENT APPLICATION NUMBER: US/09/477,962
CURRENT FILING DATE: 2000-01-05
PRIOR APPLICATION NUMBER: 60/115,435
PRIOR APPLICATION NUMBER: 60/115,435
PRIOR APPLICATION NUMBER: 60/118,848
PRIOR APPLICATION NUMBER: 60/118,848
PRIOR FILING DATE: 1999-02-05
NUMBER OF SEQ ID NOS: 133
CONTRADED DESCRIPTION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILE REFERENCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       614 RPRSEDRVTPVACLGGAFQAADVGPADLAHQGQALGAHHLVEEVRQGGLQLGDLLAPIAV 673
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       225 HGELLDYLAGLGRSVHMVVLSASDQE-----HV-----EQLVG--APGNAVL 264
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                                                                                                                                                                                                                                                                                             DU, LIANGCHENG
SANCHEZ, CESAR
CHEN, MEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RRVGPVADFAAPRGAVGQRGGEAQAEHADIFRVLDEVAGVAGGGRRRGLGGQCRVDRGEA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGEVVDRRHGAGRG----ALAAEDRQAAVVVHVVGAELGVQFVGEVAQGEAVL
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; Pred. No. 0.23;
26; Mismatches 9
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                                                                                                                                                                                                                                                                                                             ; TYPE: PRT ; ORGANISM: Pseudomonas aeruginosa US-09-252-991A-26281
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US-09-252-991A-26281
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                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQ ID NOS:
SEQ ID NO 26281
LENGTH: 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 26281, Application US/09252991A Patent No. 6551795
GENERAL INFORMATION:
                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                    Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                        FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT
ORGANISM: Streptomyces verticillus
FEATURE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              351 DHCDPELLGS----LDGTAEGPCFTFTHHQAETPVRRAGITFTTVHQDSGTPIPVRLTAR 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      256 PAELVAGIDGVAGKLSTDPATVLHAAFRIAVWRL--AGERNLPVAL------TRD 302
      101 SAAAALVCVGAIGVHHFRPERVGSTAAALALSA---QCP----VAIVRPHRVPIGRDAAW 153
                                                 154 GFVGQARGQRQAHGAGA---GAAFH--RHQVEIGGARQRPVAGEAVETALERPAEVFQHA
                                                                                                                                      94 ALVVGFDGDRPATGVRAHPFDADGAATGADVPEQLAGAGRQARQGHGADVALGQLAVVAI 153
                                                                                                                                                                             9 SIVVGIDGSKPA--VQAALWAVDEAAS-RDIPLRLLYAIEPDDPGYA-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HHFRPERVGSTAAALALSAQCPVAIVRPHR--VPIGR-DAAWIVVEADGSSDIGVLLGAV 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LGVTPGRHVVVSVGRSAELLVG 544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EAGLGPRVELPGKAVHELFAEQAA----RTPGAVAVSAGEDALTYAELDERSNRLAHHLTG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PPSIVVGIDG-----SKPAV-----QAALWAVDEAASRDIPLRLLYAIEPDDPGYAAH
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                                                                                                                                                                                                                       7.0%; Score 98.5; DB 2; Length 381; 26.1%; Pred. No. 0.053; ative 29; Mismatches 122; Indels 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35; Mismatches 122;
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CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 17111
LENGTH: 323
TYPE: PRT
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US-09-489-039A-10294
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US-09-252-991A-17111
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US-09-252-991A-17111
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             CURRENT APPLICATION NUMBER: US/09/489,039A CURRENT FILING DATE: 2000-01-27 PRIOR APPLICATION NUMBER: US 60/117,747 PRIOR FILING DATE: 1999-01-29 NUMBER OF SEQ ID NOS: 14342 SEQ ID NO 10294 LENGTH: 348
                                                                                                                                                                 PATENT NO. 6610836
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: GATY Breton et. al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING
TITLE OF INVENTION: PNEUMONIAE FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 2709.2004001
                                                                                                                                                                                                                                                                                       Sequence 10294, Ap
Patent No. 6610836
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Best Local (
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: MATC J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
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TITLE OF INVENTION:
FILE REFERENCE: 107
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TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     146 RTPLQRREQR-----TDAQAADFLVVGERQVHRQAQRRGEERRDGRQHAGQVALHVR--
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
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                                                                                                                                    282
                                                                                                      260 GNAVLQEAG
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                                                                    338 AGAINQEAG
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                                                                                                                                                                                                                                                                                                                                                 119 ALVVLPGTVYNYGPNA--FPLIAEEAAQQPVTRKGAIRVAMELALEDYVQRGGRALIVRA 176
                                                                                                                                                                                                                                                                                                                                                                                   62
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                                                                                                                                      AAPFNATLREMVEMHYLWRLPVRLRNDKLVDF---LGAEPHTPLDSAVYQT-LQGLGCLP 337
                                                                                                                                                                                                         IAALLARRHELEPFARF---HMQGHWDPDGSEMSQAIQRVVARYGGRAVVKSFPWWLVKL
                                                                                                                                                                                                                                                                             G-----DFFGPRAGNNWFSQGLVKPGQLPRIISYPGTIGVGHQWAWL------PDVAAT 224
                                                                                                                                                                                                                                                                                                             GAIGVHHFRPERVGST--AAALALSAQCPVAIVRPHRVPIGRDAAWIVVEADGSSDIGVL 167
                                                                                                                                                                                                                                                                                                                                                                                AA-----AENAVRYAFTAVEAADRPV--KVEVEITQERPVTSLIRASAAAALVCV 109
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                                                                    346
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                 2006,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 97; DB 2; Length 348; Pred. No. 0.067;
                 05:30:09
                                                                                                                                                                       -HGELLDYLAGIGRSVHMVVLSASDQEHVEQLVGAP 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
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Database :

Published Applications AA\_Main:\*

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6: /cgn2\_6/ptodata/1/pubpaa/US11\_PUBCOMB.pep:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

Result

Query

RESULT 2

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241 MVVLSASDQEHVEQLVGAPGNAVLQEAGCTLLVVGQQYL 279

| 105.5 7.5 471 471 471 471 471 471 471 471 471 471   | 7.5 471 4<br>7.5 6291 4<br>7.3 183 4<br>7.3 3025 3<br>7.3 1657 5<br>7.2 1657 5<br>7.2 2 390 5<br>7.2 30 | 4.               | 4                | 4.                  | 4.               | 4.                 | 4                | ω                | ω                | يىا                 | w                | ω                | ω                   | ω                    | ω                   | ω                | ω                | N                    |                       |
|---|--|------------------|------------------|---------------------|------------------|--------------------|------------------|------------------|------------------|---------------------|------------------|------------------|---------------------|----------------------|---------------------|------------------|------------------|----------------------|-----------------------|
| 7.5 471<br>7.5 6291<br>7.3 1296<br>7.3 3025<br>7.3 3025<br>7.3 3025<br>7.3 3025<br>7.3 435<br>7.3 1657<br>7.2 10629<br>7.2 2090<br>7.2 391<br>7.2 391<br>7.2 391<br>7.2 391<br>7.2 391<br>7.2 391<br>7.2 391<br>7.3 795   | 7.5 471 4 US-10-437-963-156094 Sequence 7.5 1976 5 US-10-937-730A-7 5 6291 4 US-10-329-079-41 Sequence 7.3 533 4 US-10-156-761-13934 Sequence 7.3 181 4 US-10-425-115-230179 Sequence 7.3 3025 3 US-10-156-761-1394 Sequence 7.3 3025 3 US-10-156-761-1393 Sequence 7.3 3025 3 US-10-203-295-38 Sequence 7.3 3025 3 US-10-203-295-8 Sequence 7.3 7429 5 US-10-732-923-2058 Sequence 7.3 7429 5 US-10-732-923-8067 Sequence 7.3 10625 5 US-10-344-738-31 Sequence 7.2 391 4 US-10-369-493-273 Sequence 7.2 391 4 US-10-369-493-2935 Sequence 7.2 795 5 US-10-473-193-43 Sequence 7.2 795 5 US-10-473-193-43 Sequence  | -                |                  |                     | -                |                    | _                | _                |                  |                     |                  |                  |                     |                      |                     |                  | _                | _                    |                       |
| י אוט אי אי אי אי ט ט ט ט ט ט אי אי אי ט  | 4 US-10-202-1304 4 US-10-337-730A-7 5 US-10-329-079-41 5 US-10-329-079-41 6 US-10-329-079-41 7 US-10-425-115-230179 7 US-10-425-115-230179 8 US-10-156-761-1393 9 US-10-156-761-13624 9 US-10-156-761-13624 9 US-10-203-295-38 9 US-10-203-295-38 9 US-10-203-295-38 9 US-10-324-293-27 9 US-10-732-923-205-8 9 US-10-732-923-205-8 9 US-10-732-923-2067 9 US-10-344-738-31 9 US-10-473-193-43 9 US-10-473-193-43  | 5 7.2            | 5 7.2            | 5 7.2               |                  |                    |                  |                  |                  |                     |                  |                  |                     |                      |                     |                  |                  |                      |                       |
| 4 US-10-437-963-156094 5 US-10-329-079-41 4 US-10-329-079-41 4 US-10-156-761-13934 5 US-10-425-115-230179 6 US-10-16-761-13624 7 US-10-203-295-38 7 US-10-203-295-38 7 US-10-760-493-27 7 US-10-760-493-27 7 US-10-344-738-31 7 US-10-344-738-31 7 US-10-349-32935 7 US-10-349-32935 7 US-10-349-32935 7 US-10-349-32935 7 US-10-349-32935 7 US-10-349-32935  | Sequence  | 795              | 795              | 402                 | 391              | 890                | 10625            | 1657             | 7429             | 5435                | 5435             | 3025             | 409                 | 181                  | 533                 | 6291             | 1976             | 471                  | *                     |
| US-10-437-963-15094 US-10-937-730A-7 US-10-937-730A-7 US-10-156-761-13934 US-10-425-115-230179 US-10-425-115-230179 US-10-425-136-24 US-09-980-217-19 US-10-203-295-38 US-10-203-295-38 US-10-312-933-20558 US-10-937-730A-5 US-10-344-738-31 US-10-344-738-31 US-10-344-738-31 US-10-344-738-31 US-10-344-738-31 US-10-344-738-31 US-10-344-738-31 | Sequence  | S                | 4                | 4                   | 4                | v                  | s                | Ŋ                | v                | u                   | 4                | ω                | 4.                  | 4.                   | 4                   | 4                | U                | 4                    | ı                     |
|   |  | US-10-473-193-43 | US-10-314-657-43 | US-10-369-493-22935 | US-10-344-738-31 | US-10-732-923-8067 | US-10-819-386A-3 | US-10-760-493-27 | US-10-937-730A-5 | US-10-732-923-20558 | US-10-203-295-38 | US-09-980-217-19 | US-10-156-761-13624 | US-10-425-115-230179 | US-10-156-761-13934 | US-10-329-079-41 | US-10-937-730A-7 | US-10-437-963-156094 | 00-10-406-1660-1007-1 |

## ALIGNMENTS

| Оу 241                                      | Qy 181<br>Db 181   | Qy 121<br>Db 121   | Qy 61<br>Db 61   | Qy 1<br>Db 1  | Query Match<br>Best Local :<br>Matches 27   | RESULT 1 Sequence 21, App Sequence 21, App Publication No. GEMERAL INFORMAT APPLICANT: Ande APPLICANT: ROS APPLICANT: COURTENT FILE CURRENT FILING CURRENT FILING PRIOR APPLICATI FILE REFERENCE: CURRENT FILING PRIOR FILING DA PRIOR FILING PRIOR FILING DA |
|---|--|--|--|---|---|---|
| MVVLSASDQEHVEQLVGAPGNAVLQEAGCTLLVVGQQYL 279 | PVRVVTCRQSGVGDTGDDVRASLDRWLARWQPRYPDVRVQSAAVHGELLDYLAGLGRSVH 240 | RVGSTAAALALSAQCPVAIVRPHRVPIGRDAAWIVVEADGSSDIGVLLGAVMAEARLRDS 180 | LAAAENAVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAAALVCVGAIGVHHFRPE 120 | MNQSHKPPSIVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEPDDPGYAAHGAAARK 60 | / Match 100.0%; Score 1410; DB 4; Length 279;<br>Local Similarity 100.0%; Pred. No. 4.8e-132;<br>nes 279; Conservative 0; Mismatches 0; Indels 0; Gaps 0; | SULT 1 -10-617-038-21 -10-617-038-21 -10-617-038-21 -10-617-038-21 -10-617-038-21 -10-617-038-21 -10-617-038-21   |

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; ORGANISM: Mycobacterium tuberculosis US-10-617-038-27
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; LENGTH: 284
; TYPE: PRT
; ORGANISM: Mycobacterium tuberculosis
US-10-617-038-42
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APPLICANT: Andersen, Ida
APPLICANT: Rosenkrands, Ida
APPLICANT: Stryhn, Anette
TITLE OF INVENTION: Therapeutic TB Vaccine
FILE REFERENCE: SSI5AUSA
CURRENT APPLICATION NUMBER: US/10/617,038
CURRENT FILING DATE: 2003-07-11
PRIOR APPLICATION NUMBER: DK PA 2002 01098
PRIOR FILING DATE: 2002-07-13
PRIOR FILING DATE: 2002-07-13
PRIOR APPLICATION NUMBER: US 60/401,725
PRIOR FILING DATE: 2002-08-07
NUMBER OF SEQ ID NOS: 187
SOFTWARE: PatentIn version 3.2
                                                                                                                                        NUMBER OF SEQ ID NOS: 187
SOFTWARE: PatentIn version
SEQ ID NO 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 27, Application US/10617038 Publication No. US20040057963A1
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  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 30.6%; Score 431.5; DB 4 Best Local Similarity 40.4%; Pred. No. 2.2e-34;
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                                                                                                                                                                                                              FILE REFERENCE: SSI5AUSA
CURRENT APPLICATION NUMBER: US/10/617,038
CURRENT FILING DATE: 2003-07-11
PRIOR APPLICATION NUMBER: DK PA 2002 01098
PRIOR FILING DATE: 2002-07-13
PRIOR APPLICATION NUMBER: US 60/401,725
PRIOR FILING DATE: 2002-08-07
                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Andersen, Peter
APPLICANT: Rosenkrands, Ida
APPLICANT: Stryhn, Anette
TITLE OF INVENTION: Therapeutic TB Vaccine
                                                                                              LENGTH: 272
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      230 LAANAKPGQLFV---ADSHSAHELCGAYQPGCAVL 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 179 DSPVRVVTCRQSGVGDTGDDV-----RASLDRWLARWQPRYPDVRVQSAAVHGELLDY 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                118 R-GSVAATLAGSALCPVAVIHPSPAEPATTSQVSAVVAEVDN----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121 RVGSTAAALALSAQCFVAIVRPH--RVPIGRDAAWIVVEADGSSDIGVLLGAVMAEARLR 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 LAAAENAVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAAALVCVGAIGVHHFRPE 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MNQSHKPPSIVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEPDDPGYAAHGAAARK 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LAGLGRSVHMVVLSASDQEHVEQLVGA--PGNAVL 264
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  29.5%;
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  Score 416;
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  <u>.</u>
Length 272;
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; Sequence 34, Application US/10138473
; Publication No. US20030165525A1
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                                                                                                                                                                 US-10-138-473-34
                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: US 09/415,884
PRIOR FILING DATE: 1999-10-08
PRIOR APPLICATION NUMBER: US 60/116,673
PRIOR FILING DATE: 1999-01-21
PRIOR APPLICATION NUMBER: DK 1998 01281
PRIOR FILING DATE: 1998-10-18
PRIOR PPLICATION NUMBER: US 60/070,488
PRIOR FILING DATE: 1998-01-05
PRIOR PPLICATION NUMBER: DK 1997 01277
PRIOR FILING DATE: 1997-11-10
PRIOR PRIOR DATE: 1997-11-10
PRIOR APPLICATION NUMBER: US 60/044,624
PRIOR PILING DATE: 1997-04-18
PRIOR FILING DATE: 1997-04-18
PRIOR FILING DATE: 1997-04-02
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                                                                                                                                                                                                                                                SOFTWARE: PatentIn version SEQ ID NO 34
                                                                               Matches
                                                                                                  Query Match
Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILE REFERENCE: 0459-0710P
CURRENT APPLICATION NUMBER: US/10/138,473
CURRENT FILING DATE: 2002-05-02
PRIOR APPLICATION NUMBER: US 10/060,428
PRIOR FILING DATE: 2002-01-29
PRIOR FILING DATE: 2002-01-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
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                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS: 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: ROSENKRANDS, Ida
APPLICANT: RASMUSSEN, Peter Birk
TITLE OF INVENTION: TB Diagnostic Based On
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
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                                                                                                                                                                                TYPE: PRT ORGANISM: Mycobacterium tuberculosis
                                                                                                                                                                                                                             LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            188 PEELREIPD---GEFERRVQDWHHRHPDVRVYPITTHTGIARFLADHDERVQLAVIGGGE 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              128 LÁEKÁHCPVÁVMRSKVDQPASDINWIVVRMTDAPDNEAVLEYAAREAKLRQAPILALGGR 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       129
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    69 RYAFTAVEAADREVKVEVEITQEREVTSLIRASAAAALVCVGAIGVHHFREERVGSTAAA 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11 TIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTHPSPDDYD---RDLAHAERSL
                                      1 MNQSHKPPSIVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEPD------DPGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9 SIVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEPDDPGYAAHGAAARKLAAAENAV
                                                                                                    Similarity
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  MSSGNSSLGI I VGI DDS PAAQVAVRWAARDAELRKI PLTLVHAVS PEVATWLEVPLPPGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGQLARLVGPSGHPVFRHAECSVLVV 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QEHVEQLVGAPGNAVLQEAGCTLLVV 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OSGVGDTGDDVRASLDRWLARWQPRYPDVRVQSAAVHGELLDYLAGLGRSVHMVVLSASD
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OKKELS, Li Mei Meng
SKJORT, Rikke Louis
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HANSEN, Christina Veggerby
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                                                                               Score 214; DB 4;
Pred. No. 1.3e-12;
7; Mismatches 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No.
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                                                                                                                    Length 297;
                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               From
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PRIOR APPLICATION NUMBER: PCT/EP01/14551
PRIOR FILING DATE: 2001-12-11
PRIOR APPLICATION NUMBER: 0030368.5
PRIOR FILING DATE: 2000-12-13
NUMBER OF SEQ ID NOS: 21
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 4
LENGTH: 297
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; TYPE: PRT ; ORGANISM: Mycobacterium tuberculosis US-10-450-726-4
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US-10-450-726-4
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Dick, Thomas
APPLICANT: Boon, Calvin Ka Khiu
TITLE OF INVENTION: DORMANCY-INDUCED MYCOBACTERIUM PROTEINS
FILE REFERENCE: 50318/002001
CURRENT APPLICATION NUMBER: US/10/450,726
CURRENT FILING DATE: 2003-06-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Match 15.2%;
Local Similarity 27.2%;
283
                                                                                       223
                                                                                                                                                                                                                                                                      112
                                                                                                                                                                                                                                                                                                                 105 ALVCVGAIGVHHFRPERVGSTAAALALSAQCPVAIV-----RPHRVPIGRDAAWIVV 156
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                                        265
                                                                                                                                                                                                                         157 EADGSSDIGVLLGAVMAEARLRDSPVRVVTCRQSGVGDT----GDDVRAS-----LDR 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       223
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        112 VLMVVGCLGSGRWPGRLLGSVSSGLLRHAHCPVVIIHDEDSVMPHPQQAP------VLV 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 206 WLARWQPRYPDVRVQSAAVHGELLDYLAGLGRSVHMVVLSASDQ-EHVEQLVGAPGNAVL 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     105 ALVCVGAIGVHHFRPERVGSTAAALALSAQCPVAIV-----RPHRVPIGRDAAWIVV 156
                                                                                                                                                                                                                                                                                                                                                              61 LRWQQDHG-----RHLIDDALKVVEQASLRAGPPTVHSEIVPAAAVPTLVDMSKDA 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               52
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MNQSHKPPSIVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEPD------DPGY 51
QLARTPVIV 291
                                                                                       RLAGWÓERYPNVAITRVVVRDQPARQLVQRSEEAQLVVVGSRGRGGYAGMLVGSVGETVA 282
                                                                                                                               WLARWOPRYPDVRVQSAAVHGELLDYLAGLGRSVHMVVLSASDQ-EHVEQLVGAPGNAVL 264
                                                                                                                                                                            GVDGSSASELATAIAFDEASRRN--VDLVALHAWSDVDVSEWPGIDWPATQSMAEQVLAE
                                                                                                                                                                                                                                                                    VLMVVGCLGSGRWPGRLLGSVSSGLLRHAHCPVVIIHDEDSVMPHPQQAP-----VLV 164
                                                                                                                                                                                                                                                                                                                                                                                                        AA----HGAAARKLAAAENAVRYAFTAVEAAD---RPVKVEVBITQERPVTSLIRASAAA 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                       MSSGNSSLGIIVGIDDSPAAQVAVRWAARDAELRKIPLTLVHAVSPEVATWLEVPLPPGV 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QEAGCTLLY 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EADGSSDIGVLLGAVMAEARLRDSPVRVVTCRQSGVGDT----GDDVRAS-----LDR 205
                                          QEAGCTLLV 273
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA----HGAAARKLAAAENAVRYAFTAVEAAD---RPVKVEVEITQERPVTSLIRASAAA 104
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 214; DB 5; Length 297; Pred. No. 1.3e-12;
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CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR FILING DATE: 2001-05-30
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 8839
LENGTH: 295
TYPE: PRT
ORGANISM: Streptomyces avermitilis
US-10-156-761-8839
APPLICANT: HAYASHI, MIKIRO
APPLICANT: OCHIAI, KEIKO
APPLICANT: YOKOI, HARUHIKO
APPLICANT: TAREISHI, NAOKO
APPLICANT: IKEDA, MASATO
APPLICANT: OKAKI, AKIO
APPLICANT: OKAKI, AKIO
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-125
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US-09-738-626-6745
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US-10-156-761-8839
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Publication No. US20030119018A1
GENERAL INFORMATION:
APPLICANT: OMURA, SATOSHI
APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
APPLICANT: HORIKAWA, HIROSHI
APPLICANT: HORIKAWA, HIROSHI
APPLICANT: HORIKAWA, HIROSHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
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APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REPERENCE: 249-262
                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                APPLICANT: NAKAGAWA, SATOSHI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  119 PERVGSTAAALALSAQCPVAIVRPHRV-----PIGRDAAW--IVVEADGSSDI 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               67 VQLA-----YAHPALDIIARR-----TETPAVPALLAAAAEAETLVLGSRGFTGFA 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       59 RKLAAAENAVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAAALVCVGAIGVHHFR 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       87;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9 SIVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYA-IEP------DDPGYAAHGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DRLIAYAFEAAAVRSAPLHVVHTWTTLPPTGHAPGAPLPGDAAEREEGARRTLTTTLQPW 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BAGCTLLVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RHKFPGTDVLERVIPGHPGHHLLRASIRAGLLVIG-----RRTSAPGLGRAARSLIH 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GVLLGAVMAEARLRDSPVRVV-----TCRQSGVGDTGD-----DVRASLDRWLARW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GFLVGSVALAVAARAARPVVLVRTGELAEDERMPADDGTPPGR-AAYLPVVLGLDLDHPA 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QPRYPDVRVQSAAVHGELLDYLAGLGRSVHMVVLSASDQEHVEQLVGAPG-----NAVLQ 265
                                                                                                                                                                                                                            MIZOGUCHI, HIROSHI
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; Pred. No. 5.2e-12;
39; Mismatches 117;
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CURRENT FILING DATE: 2000-12-22
PRIOR APPLICATION NUMBER: 09/606740
PRIOR PILING DATE: 2000-06-23
PRIOR PPLICATION NUMBER: 09/603124
PRIOR APPLICATION NUMBER: 09/41031
PRIOR FILING DATE: 1999-06-25
PRIOR PLICATION NUMBER: 60/142101
PRIOR PLICATION NUMBER: 60/142101
PRIOR PILING DATE: 1999-07-02
PRIOR APPLICATION NUMBER: 60/148613
PRIOR APPLICATION NUMBER: 60/187970
PRIOR APPLICATION NUMBER: 60/187970
PRIOR APPLICATION NUMBER: 60/187970
PRIOR APPLICATION NUMBER: 00/187970
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PRIOR APPLICATION NUMBER: 01/187970
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Pompejus, Markus
APPLICANT: Kroger, Burkhard
APPLICANT: Schroder, Hartwig
APPLICANT: Zelder, Oskar
APPLICANT: Haberhauer, Gregor
APPLICANT: Kim, Jun-Won
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 6, Application US/09746660A Publication No. US20030049804A1
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PRIOR FILING DATE: 1999-12-16
PRIOR PELICATION NUMBER: JP 00/159162
PRIOR PILING DATE: 2000-04-07
PRIOR APPLICATION NUMBER: JP 00/280988
PRIOR FILING DATE: 2000-08-03
NUMBER OF SEQ ID NOS: 7059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Hwang, Byung-Joon
TITLE OF INVENTION: CORYNBBACTERIUM GLUTAMICUM GENES ENCODING
TITLE OF INVENTION: METABOLIC PATHWAY PROTEINS
FILE REFERENCE: BGI-121CP2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION NUMBER: US/09/746,660A
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CURRENT FILING DATE: 2000-12-18
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TYPE: PRT
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Local Similarity 26.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             239 KIITRDRPVRALAEASENAQLLVVGSHGRGGFKGMLLGSTSRALLQSAPCPMMVV 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120 SGMVMGSVSGAVVSHAKCPVVVVREDSA-VNEDSKYGPVVVGVDGSEVSQQATEYAFAEA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          67 LEKINEARD-----IAHEVAPE-IKIGHTIAEGSPIDMLLEMSPDATMIVMGSRGLGGL
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          NUMBER: DE 19931420.9
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Pred. No. 6.7e-12;
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                                                                              NUMBER OF SEQ ID NOS:
SOFTWARE: PatentIn Ves
SEQ ID NO 20
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Publication No.
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SOFTWARE: PatentIn Vers. 2.0
SEQ ID NO 6
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APPLICANT: Lee, Heung-Schick
APPLICANT: Lee, Heung-Schick
APPLICANT: Hwang, Byung-Joon
TITLE OF INVENTION: CORYNBACTERIUM GLUTAMICUM GENES ENCODING
TITLE OF INVENTION: METABOLIC PATHWAY PROTEINS
FILE REFERENCE: BGI-121CP2
CURRENT APPLICATION NUMBER: US/09/746,660A
CURRENT FILING DATE: 2000-12-22
PRIOR APPLICATION NUMBER: 09/603124
PRIOR APPLICATION NUMBER: 09/603124
PRIOR STILING DATE: 2000-06-23
PRIOR APPLICATION NUMBER: 09/603124
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PRIOR APPLICATION NUMBER: 60/141031
PRIOR FILING DATE: 1999-06-25
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APPLICANT: Kroger, Burkhard
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                ORGANISM: Corynebacterium glutamicum
                                                            LENGTH: 301
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                                                                                                                                                                                               APPLICATION NUMBER: 60/187970 FILING DATE: 2000-03-09
                                                                                                                                                                                                                                           FILING DATE: 1999-08-12
                                                                                                                                                                                                                                                                APPLICATION NUMBER: 60/148613
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No. US20030049804A1
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26.1%;
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Pred. No. 6.7e-12;
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Sequence 8, Application US/10450055
Publication No. US20040043953A1
GENERAL INFORMATION:
APPLICANT: BASP Aktiengesellschaft
TITLE OF INVENTION: No. US20040043953A1el ge:
FILE REFERENCE: 936 2000
CURRENT APPLICATION NUMBER: US/10/450,055
CURRENT FILING DATE: 2003-06-10
NUMBER OF SEQ ID NOS: 46
SOFTWARE: Patentin Vers. 2.0
SEQ ID NO 8
RESULT 11

US-11-006-098-314

; Sequence 314, Application US/11006098

; Publication No. US20050153402A1

; GENERAL INFORMATION:
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; TYPB: PRT
; ORGANISM: Corynebacterium glutamicum
US-10-450-055-8
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US-10-450-055-8
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Best Local Similarity
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26.1%; Pred. No. 6.7e-12;
tive 46; Mismatches 134; Indels
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26.1%; Pred. No. 6.7e-12;
tive 46; Mismatches 134; Indels
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                                                                                                                                                                      RESULT 12
US-10-156-761-8814
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Pompejus, Markus
APPLICANT: Kroger, Burkhar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR FILING DATE: 1999-07-09
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77; Conserv
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Sequence 8814, Application US/10156761
Publication No. US20030119018A1
GENERAL INFORMATION:
APPLICANT: OMURA, SATOSHI
APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
APPLICANT: HORIKAWA, HIROSHI
APPLICANT: SHIBA, TADAYOSHI
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CURRENT FILING DATE: 2004-12-06
PRIOR APPLICATION NUMBER: US/09/602,874
PRIOR FILING DATE: 2000-06-23
PRIOR APPLICATION NUMBER: 60/141031
PRIOR FILING DATE: 1999-06-25
PRIOR FILING DATE: 1999-06-25
PRIOR FILING DATE: 1999-07-01
PRIOR FILING DATE: 1999-07-01
PRIOR FILING DATE: 1999-07-01
PRIOR APPLICATION NUMBER: 60/151251
PRIOR APPLICATION NUMBER: 60/151251
PRIOR FILING DATE: 1999-08-27
PRIOR FILING DATE: 1999-08-27
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PRIOR APPLICATION NUMBER: DE 19932122.1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: DE 19932128 FILING DATE: 1999-07-09
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      118 RPERVGSTAAALALSAQCPVAIVRPHRVPIGRDAAW--IVVEADGSSDIGVLLGAVMAEA 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              67 LEKINEARD-----IAHEVAPE-IKIGHTIAEGSPIDMLLEMSPDATMIVMGSRGLGGL 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           58 ARKLAAAENAVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAAALVCVGAIGVHHF 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10 IVVGIDGSKPAVQAALWAVDEAASRDIPLRL------LYA---IEPDDPGYAAHGAA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SAAVHGELLDYLAGLGRSVHMVVLSASDQEHVE-QLVGAPGNAVLQEAGCTLLVV 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     --DSPVRVVTCRQSGVGDTGDDV-RASLDRWLARWQP---RYPDVRVQ 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              46; Mismatches 134;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 207; DB 6;
Pred. No. 6.7e-12;
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US-10-282-122A-53861
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; TYPE: PRT
; ORGANISM: Streptomyces avermitilis
US-10-156-761-8814
             FILE REFERENCE: ELITRA.034A
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT APPLICATION NUMBER: 2003-02-20
PRIOR PILING DATE: 2000-03-21
PRIOR PPLICATION NUMBER: 60/191,078
PRIOR PPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR APPLICATION NUMBER: 60/207,335
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR APPLICATION NUMBER: 60/230,347
PRIOR APPLICATION NUMBER: 60/230,347
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Publication No. US20040029129A1
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PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
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CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2001-204089
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TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
                                                                                                                                                                                                                                                                                 APPLICANT: Xu, H.
ITTLE OF INVENTION: Identification of Essential Genes in Microorganisms
                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241 KVLLDASATADLLVVGARRHPGHSGLQLGRVAHAMLHHSACPVAVV 286
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            65 IVEAAAQRAHRRHADVKISTDVLPEEPAPALLREGNEAFALVLGSRGRSGLAELLLGSVS 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   67 AVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAAALVCVGAIGVHHFRPERVGSTA 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10 IVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAI--EPDDPGYAAHG-AAARKLAAAEN 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         77; Conservative
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Similarity 26.9%;
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Zamudio, cu-
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cob
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Ohlsen, Kari
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Trawick, John
                                                                                                                                                                                                                                                                                                                               Forsyth, R.
                                                                                                                                                                                                                                                                                                                                                      Yamamoto, Robert
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dio, Carlos
                                                                                                                                                                                                                                                                                                                                                                           Grant
2000-09-09
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Pred. No. 7.2e-12;
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; ORGANISM: Cornyebacterium diptheriae
US-10-282-122A-53861
                                                               ; OTHER INFORMATION: Clone ID: PAT_MRT4530_29199C.1.pep US-10-437-963-126675
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                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION.
APPLICANT: La Rosa, Thomas
APPLICANT: Kovalic, David
APPLICANT: Zhou, Yihua
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: 60/242,578
PRIOR FILLING DATE: 2000-10-23
PRIOR APPLICATION NUMBER: 60/253,625
PRIOR FILLING DATE: 2000-11-27
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/267,636
PRIOR APPLICATION NUMBER: 60/267,636
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR FILLING DATE: 2001-02-16
PRIOR FILLING DATE: 2001-02-16
PRIOR FILLING DATE: 2001-02-16
                                                                                                                                                                 TITLE OF INVENTION: Rice Nucleic Acid Molecules and Other Molecules Associated With TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement FILE REFERENCE: 38-21(53221)B CURRENT APPLICATION NUMBER: US/10/437,963 CURRENT FILING DATE: 2003-05-14 NUMBER OF SEQ ID NOS: 204966 SEQ ID NO 126675

LENGTH: 181
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SEQ ID NO 53861
                    Query Match
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Best Local Similarity
Best Local Similarity
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                                                                                                                           TYPE: PRT
ORGANISM: Oryza sativa
                                                                                                           FEATURE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              58 ARKLAAAENAVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAAALVCVGAIGVHHF 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10 IVVGIDGSKPAVQAALWAVDEAASRDIPLRL-----LYA---IEPDDPGYAAHGAA
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Cao. Yongwei
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAVHGELLDYLAGLGRSVHMVVLSASDQEHVE-QLVGAPGNAVLQEAGCTLLVV 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LRDSP-VRVVTCRQSGVGDTGDDVRASLDRW-----LARWQP---RYPDVRVQS 221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SGMVMGSVSAAVVSHADCPVVVVRSDNHVTETNKYGPVVVGVDGSDVSQRATEFAFEEAQ
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Wu, Wei
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Barbazuk, Brad
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9.3%;
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Score 131; DB 4;
Pred. No. 0.00013;
                  Length 181;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/10/760,493
CURRENT FILING DATE: 2004-01-21
PRIOR APPLICATION NUMBER: USSN 60/441,123
PRIOR FILING DATE: 2003-01-21
PRIOR APPLICATION NUMBER: USSN 60/469,810
PRIOR FILING DATE: 2003-05-13
PRIOR APPLICATION NUMBER: USSN 60/491,516
PRIOR FILING DATE: 2003-08-01
PRIOR FILING DATE: 2003-08-01
PRIOR APPLICATION NUMBER: USSN 60/494,568
PRIOR FILING DATE: 2003-08-13
NUMBER OF SEQ ID NOS: 78
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: PatentIn version 3.0
SEQ ID NO 33
LENGTH: 3227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 33, Application US/10760493 Publication No. US20050187167A1
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APPLICANT: Farnet, Chris M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Piraee, Mahmood
TITLE OF INVENTION: POLYENE POLYKETIDES, PROCESSES FOR THEIR PRODUCTION AND THEIR USE
TITLE OF INVENTION: PHARMACEUTICALS
FILE REFERENCE: 3004-9US
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2825 -- APGAAELRDELTALGAQVTIATCDMADRDAVAALIAAVPADQPLTAVMHTAG 2876
                                                                                                    2770 LVHAPLADT-AAVREWRPOGTTLVTGGTG-ALGAHVARWLAENGAEHLLLTSRRGPD---
                                                                                                                                                                                                     2710 ALVSGFGRTVALEYPDRWGGLVDLPEQADGRTLERLAGVLAGDGSEDQVALRASGLFGRR 2769
                                                                                                                                                                                                                                                                                                            2652 SILALAVESAELRTHTGLLATAALVQALGDADVAAPLWCVTRGAVSV--ARTERLQDPAQ 2705
                                                                                                                                                                                                                                                                                                                                                                                                                  2592 LVVVPENGPADEWTGAVLKVLADRGAEVKTVTVPADGADKDRLAATLKAETDGAAPAGVL 2651
                                                                                                                                                    172 MAEARLRDSPVRVVTCRQSG----VGDTGDDVRASLDRWLAR------WQPRYPDVRV 219
                                                                                                                                                                                                                                                        128 ALALSAQCPYAIVRPHR-----VPIGRDAAWI-----VVEADGSSD-----IGVLLGAV 171
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                                                                                                                                                                                                                                                                                                                                                            86 -----VEITQERPVTSLIRASA------AAALVCV--GAIGVHHFRPERVGSTAA 127
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                                                QSAAVHGELLDYLAGIGRSVHMVVLSASDQEHVEQLVGA----PGNAVLQEAG 268
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Zazopoulos, Emmanuel
Bachmann, Brian O.
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Search completed: March 23, 2006, 06:28:09

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  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed,
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length: 2000000000
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1: /cgn2 6/ptodata/1/pubpaa/US08 NEW PUB.pep:*

2: /cgn2 6/ptodata/1/pubpaa/US06 NEW PUB.pep:*

3: /cgn2 6/ptodata/1/pubpaa/US07 NEW PUB.pep:*

4: /cgn2 6/ptodata/1/pubpaa/PCT NEW PUB.pep:*

5: /cgn2 6/ptodata/1/pubpaa/US09 NEW PUB.pep:*

6: /cgn2 6/ptodata/1/pubpaa/US10 NEW PUB.pep:*

6: /cgn2 6/ptodata/1/pubpaa/US11 NEW PUB.pep:*

7: /cgn2 6/ptodata/1/pubpaa/US10 NEW PUB.pep:*
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Maximum Match 100%
Listing first 45 summaries
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 GenCore version (c) 1993 - 2006
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         US-11-087-099-3468
US-11-055-822-14
US-11-096-568A-32572
US-11-096-568A-27882
US-11-096-568A-17170
US-11-096-568A-17170
US-11-096-568A-1340
US-11-096-568A-18549
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6963, Ap
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32572, A
17181, A
17170, A
18547, Ap
18548, Ap
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18548, Ap
18548, Ap
2544, App
18548, Ap
254, Appl
4, Appl
4, Appl
15, Appl
15, Appl
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15, Appl
48, Appl
3411, Ap
5731, Ap
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RESULT 2
US-11-055-822-14
; Sequence 14, Application US/11055822
; Publication No. US20050260707A1
; GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                   RPERVGSTAAALALSAQCPVAIVRPHRVPIGRDAAWIVVEADGSSDIGVLLGAVMAEA-R 176
                                                                                                                                                                                                                                                                                                                  KLAAA--ENAVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAAALVCVGAIGVHHF 117
                                                                                                                 RVETPEKHPAAALLDE----GADADLIVVGSRGRGGFTGLLLGSVSQQVLNHAVVPVAVV
                                                                                                                                                RVQSAAVH--GELLDYLAGLGRSVHMVVLSASDQ-EHVEQLVGAPGNAVLQEAGCTLLVV 274
                                                                                                                                                                                   LRAELVAVYAWQAPDAPVDPFTVLQADVAVDREQQVARAREWLLRTVDEARTPLTQRVPV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14.8%; Score 209; DB 7;
28.0%; Pred. No. 8.6e-12;
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APPLICANT: Pompejus, Markus

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CURRENT FILING DATE: 2005-02-11
PRIOR APPLICATION NUMBER: 09/606,740
PRIOR FILING DATE: 2000-06-23
PRIOR FILING DATE: 1999-06-25
PRIOR PLICATION NUMBER: 60/141,031
PRIOR PLICATION NUMBER: 60/142,101
PRIOR PLICATION NUMBER: 60/142,101
PRIOR PLICATION NUMBER: 60/148,613
PRIOR PILING DATE: 1999-08-12
PRIOR FILING DATE: 1999-08-12
PRIOR FILING DATE: 1999-08-12
PRIOR FILING DATE: 1990-08-12
PRIOR FILING DATE: 1990-08-12
PRIOR PILING DATE: 1990-08-12
PRIOR FILING DATE: 1990-08-12
PRIOR APPLICATION NUMBER: 60/187,970
PRIOR FILING DATE: 2000-03-09
PRIOR FILING DATE: 1999-07-01
PRIOR APPLICATION NUMBER: DE 1990476.9
PRIOR FILING DATE: 1999-07-01
                 Sequence 6347, Application US/11087099
Publication W. US20060041961A1
GENERAL INFORMATION:
APPLICANT: Abad, Mark S. et al.
TITLE OF INVENTION: Genes and Uses for Pla
FILE REFERENCE: 38-21 (53450) B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
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LENGTH: 301
TYPE: PRT
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Best Local (
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NUMBER OF
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TITLE OF INVENTION: CORYNEBACTERIUM GLUTAMICUM GENES
TITLE OF INVENTION: METABOLIC PATHWAY PROTEINS
FILE REFERENCE: BGI-121CPCN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 1999-07-08
APPLICATION NUMBER: DE 19931418.7
FILING DATE: 1999-07-08
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: DE 19931419.5
FILING DATE: 1999-07-08
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                                                                                                                                                                                                                                                                                                                        239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      118 RPERVGSTAAALALSAQCPVAIVRPHRVPIGRDAAW--IVVEADGSSDIGVLLGAVMAEA 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       67 LEKINEARD-----IAHEVAPE-IKIGHTIAEGSPIDMLLEMSPDATMIVMGSRGLGGL 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10 IVVGIDGSKPAVQAALWAVDEAASRDIPLRL------LYA---IEPDDPGYAAHGAA
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SEQ ID NOS:
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                                                                                                                                                                                                                                                                                                                        KIITRDRPVRALAEASENAQLLVVGSHGRGGFKGMLLGSTSRALLQSAPCPMMVV
                                                                                                                                                                                                                                                                                                                                                                         SAAVHGELLDYLAGLGRSVHMVVLSASDQEHVE-QLVGAPGNAVLQEAGCTLLVV 274
                                                                                                                                                                                                                                                                                                                                                                                                                         EARGAELVAVHTWMDMQVQASLAGLAAAAQQQWDEVERQQTDMLIERLAPLVEKYPSVTVK
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SGMVMGSVSGAVVSHAKCPVVVVREDSA-VNEDSKYGPVVVGVDGSEVSQQATEYAFAEA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14.7%; Score 207; DB 7; 26.1%; Pred. No. 1.3e-11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -DSPVRVVTCRQSGVGDTGDDV-RASLDRWLARWQP----RYPDVRVQ 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       46;
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                                                                                              for Plant Improvement

    See File Wrapper or PALM

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RESULT 5
US-11-096-568A-32572
US-11-096-568A
Sequence 32572, Application US/11096568A
Publication No. US20060048240A1
GENERAL INFORMATION:
APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence-Determined D
TITLE OF INVENTION: Therby
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SEQ ID NO 6963
LENGTH: 828
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LENGTH: 152
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Best Local Similarity
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TITLE OF INVENTION: Genes and Uses for Plant Improvement
FILE REFERENCE: 38.21(5345)B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
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                                                                                                                                                                                                                                                                                                                                                                     469
                                                                                                                                                                                                                                                                                                                                                                                                          120 ERVGSTAA-ALALSA-----QCPVAIVRPHRVPIGRDAAWIVVEADGSSDIGVLLGAVMA 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              359 PPYQVSVAEGLTALLGDÄVDVVDGVEVRTRPVPARPGFVVDPDTGRPGLH----LTLLAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              113 RRGRGAFARAMLGSVSQRCAQHAACPVVVVR 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   111 AIGVHHFRPERVGSTAAALALSAQCPVAIVR 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   65 ENAVRYAFTAVEAADRPVKVEVEITQERP----VTSLIRASAAAALVCVGAIGVHHFRP 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               51 YAAHGAAARKLAAAENAVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAAALVCVG 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          78;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MNQSHKPPSIVVGIDGSKPAVQAALWA-----VDEAASRDIPLRLLYAIEPDDPG
                                                                                                                                                                                                                                                                                                                                                                     TAGGTELAWTLATSGTGFAEEMLAPPTRTDQVHVGSDA-----
                                                                                                                                                                                                                                                GELLDYLAGLGRSVHMVVLSASDQEHVEQL----VGAPG-----NAVLQEAGCTLLVV 274
                                                                                                                                                                                                                                                                                                                              EARLRDSPVRVVTCRQSGVGDTGDDVRAS-----LDRWLARWQPRYPDVRVQSAAVH 225
                                                                                                                                                                                                                                                                                                                                                                                                                                                DGTV-----LDERHDAPSTVMVGFDDDFPQAVARVRFRARVAGEGALE-VGAIGVGRWQV
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                                                                                                                                                                                                            - AAAQADVAVVVVGLTEEEETESVDKSTIALPGAQDALVRAVAAAARRTVVVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7.1%; Score 99.5; I
26.1%; Pred. No. 0.39
tive 29; Mismatches
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Pred. No. 1.8e-05;
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Sequence-Determined DNA Fragments and Corresponding Polypeptides  $\boldsymbol{\mathfrak{l}}$  Therby

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               RESULT 7
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Sequence 17171, Application US/11096568A
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CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 27882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQ ID NO 32572
LENGTH: 171
TYPE: PRT
ORGANISM: Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                           Query Match
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LOCATION: (1). (171)
OTHER INFORMATION: Ceres Seq. ID no.
-11-096-568A-32572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: Sequence-Determined DNA TITLE OF INVENTION: Therby FILE REFERENCE: 2750-1592PUS2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Alexandrov, Nickolai et al.
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CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
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                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc_feature
LOCATION: (1)...(179)
OTHER INFORMATION: Ceres Seq. ID no.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: PRT
TYPE: PRT
ORGANISM: Arabidopsis thaliana
PEATURE:
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                                                                                                                                                                                                                                                                       10 IVVGIDGSKPAVQAALWAVD----EAASRDIPLRLLYAIEPD-----DPGYAAHGAA-
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                                                                                                                                                                                                                                                                                                           38;
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                                                                                                                                                                                                                                                                                                                          7.0%;
Similarity 23.0%;
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                                                                                                                          A--SAAAALVCVGAIGVHHFRPERVGSTAAALALSAQCPVAIVRP 142
                                                                                                                                                              EVPAFTAAIEQHQKRITDTILEHASQICAEKSVSRVISLVSPVNVKTQVVIGDPKYKICE 128
                                                                                                                                                                                               ---ARKLAAABNAVRYAFTAVEAADR------PVKVEVEITQERPVTSLIR 99
                                                                                                                                                                                                                                   VVVAVDGSEVSMEALRWALDNIKLSSSSSDSFVVLH-VQPSPSVAAGVSPGTIPFGGGI 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LVCVGAIGVHHFRPERVGSTAAALALSAQCPVAIVRP 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GLEVPAFTAAIEQHQKRITDTILEHASQICAEKSVNVKTQVVIGDPKYKICEAVENLHAD 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VVVAVDGSEVSMEALRWALDNLKLSSSSSDSSFVVLH-VQPSPSVAAGVSPGTIPFGGPS 68
                                                                                      AVENLHADLIVMGSRAYGRIKRMFLGSVSNYCTNHAHCPVVIIKP 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LLVMGSRAYGRIKRMFLGSVSNYCTNHAHCPVVIIKP 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ---AAARKLAAAENAVRYAFTAVE----AADRPVKVEVEITQERPVTSLIRA--SAAAA 105
                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
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                                                                                                                                                                                                                                                                                                         30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31;
                                                                                                                                                                                                                                                                                                                        Score 98.5; DB 7;
Pred. No. 0.064;
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TITLE OF INVENTION: Sequence-Determined DNA Fragments and Corresponding Polypeptides
TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
CURRENT ENLING APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 1370
                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 17170, Application US/11096568A Publication No. US20060048240A1 GENERAL INFORMATION:
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CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 17171
LENGTH: 357
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Best Local Similarity
Matches 67; Conserv
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GENERAL INFORMATION:
APPLICANT: Alexandrov, Nickolai et al.
                                                                     Matches
                                                                                                     Query Match
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                                                                                                                                                       NAME/KEY: misc_feature LOCATION: (1)..(370)
OTHER INFORMATION: Ceres
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: PRT ORGANISM: Zea mays subsp.
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NAME/KEY: misc_feature
LOCATION: (1)...(357)
OTHER INFORMATION: Ceres
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                                                                                                                                                                                                                                                                      LENGTH: 370
                                                                Local Similarity
mes 67; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             106 LVCVGAIGVHHFRPERVGSTAAALALSAQCPVAIVRPHRVPIGRDAAWIVVEADGSSDIG 165
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                                KPPSIVVGIDGSKPAVQAALWAVDEAASRDIPL-RLLYAI-----EPDDPGY--
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YDVTMDASRGIWARVFAPA------AADRPL------PVVVYFHGGGFA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----AAHGAAARKLAAAENAVRYAFTAVEAADRPVKVEVEITQERPVTSLIRASAAAA 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KPPPLPLSVRLQLAGLTAAIDAVER----RDGTVNRCLYGVIDRLLSARASPRPDASGVRS 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KPPSIVVGIDGSKPAVQAALWAVDEAASRDIPL-RLLYAI------EPDDPGY--
KPPPLPLSVRLQLAGLTAAIDAVER----RDGTVNRCLYGVIDRLLSARASPRPDASGVRS
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                                                                   Conservative
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                                                                                    25.9%;
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                                                                  27; Mismatches
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Pred. No. 0.22
27; Mismatches
                                                                                    Score 97;
Pred. No. (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 232
                                                                                                     DB 7;
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                                                                                                       Length 370;
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                                                                     Indels
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Gaps

59

67

104

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RESULT 10
US-11-096-568A-18547
; Sequence 18547, Application US/11096568A
; Publication No. US20060048240A1
; GENERAL INFORMATION:
; APPLICANT: Alexandrov, Nickolai et al.
; TITLE OF INVENTION: Sequence-Determined DNA Fragments and
; TITLE OF INVENTION: Therby
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US-11-096-568A-13340
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TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-15920US2
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 13340
LENGTH: 316
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LOCATION: (1)...(316)
OTHER INFORMATION: Ceres Seq. ID no.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: PRT
ORGANISM: Triticum aestivum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
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                                                                                                                                                                                                                                                  SVHMVVLSASDQEHVEQLVGAPGNAVLQEAGCTLL 272
                                                                                                                                                                                                                                                                                                                               DSPVRVVTCROSGV-GDTGDDVRASLDRWLARWQPRYPDVRVQSAAVHGELLDYLAGLGR 237
                                                                                                                                                                                                                                                                                                                                                                        EFVPAVRDIA-----AGSDVLVLSCALTEETRHVVNREVMEALGKAGVLVNVGRGGLV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
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                                  Corresponding Polypeptides
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                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Abad, Mark S. et al.
TITLE OF INVENTION: Genes and Uses for Plant Improvement
FILE REFERENCE: 38-21(53450)B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
NUMBER OF SEG ID NOS: 12464
SEQ ID NO 2546
LENGTH: 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2546, Application US/11087099
Publication No. US20060041961A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                   Query Match
Best Local Similarity
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Best Local (
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SEQ ID NO 18547
LENGTH: 345
TYPE: PRT
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NAME/KEY: misc_feature
LOCATION: (1)...(345)
OTHER INFORMATION: Ceres Se
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
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                  105 ALVCVGAIGVHHFRPERVGSTAAALALSAQCPVAIVRPHRV 145
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                                                                                                                                     ഗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MAAAIDLSGEELMRALEPFIRDASAHGSSPLLHPHQPLSPSSPFSFHQAVA-VAAASSYG
                                                                                                                                                                          2 NQSHKPPSIVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEP---DDPGYAAHGAA-
                                                         ILPIVDSDLRKIAARVLETAKQLCF---
                                                                                              -----ARKLAA--AENAVRYAFTAVEAADRPVK-VEVEITQERPVTSLIRA--SAAA 104
                                                                                                                                     SSSSEKQVVLIGIDDSEQSTYALNWALDHFFPSPIFKLVLIHSRPTATSAVGFAGPGAAB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       --LGLPPRQLIVAPCWLAGWLPSYPHCRRAAGGGLKKVNGRRADGILDILRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VLPRVRHRVLVPVPVHVAVRLARADGAGDAAAGLQRGAVGRGRRLRAHQVPVVRDR----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RRLPRPAPRLRRRQAPEPVPEHRRVQEGRQEASLRRSCRV-VVRPHQQLLLLLAVVRRRDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LYPRRAAAALGQVGGGDPAPAQPHPALARHLRHRRGGGAGLRPGRLPPPRRRGAPQLPRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ----ALVCVGAIG------VHHFR-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GNYPFAAPDEAGQLSPSQMQYIQARLHLQRRQAQTSVLGPRAQPMKASASAAPAPARPQK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VRYAFTAVEAADRPVKVEVEITQER-----PVTSLIRASAAA-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GDTGDDVRASL---DRWLARWQPRYPDVRVQSAA----VHGE----LLDYLAG
                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----VPIGRDAAWIVVEADGSSD--IGVLLGAVMAEARLRDSPVRVVTCRQSGV 192
                                                                                                                                                                                                             6.6%; Score 93.5; DB 26.7%; Pred. No. 0.16; rative 25; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Seq.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -PE--RVGSTAAALALSAQCPVAIVRPHR----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 94.5;
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
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                                                         -NKSVNDVTAEVVEGDPRNVLCDAVDKYRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 345;
                                                                                                                                                                                                                                                      Length 161;
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234

294

238 144 179 118

23;

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RESULT 13
US-11-096-568A-18548
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; TYPE: PRT
; ORGANISM: Glycine max
US-11-087-099-6989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 12
US-11-087-099-6989
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                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence-Determined DNA Fragments and Corresponding Polypeptides
TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 1848
LENGTH: 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 6989, Application US/11087099
Publication No. US20060041961A1
GENERAL INFORMATION:
APPLICANT: Abad, Mark S. et al.
TITLE OF INVENTION: Genes and Uses for Plant
FILE REFERENCE: 38-21(53450) B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 18548, Application US/11096568A Publication No. US20060048240A1 GENERAL INFORMATION:
                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQ ID NO 6989
                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                               -11-096-568A-18548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQ ID NOS: 12464
                                                                                                                                                                                                                                                        TYPE: PRT
ORGANISM: Zea mays subsp. mays
FEATURE:
NAME/KEY: misc_feature
LOCATION: (1)...(333)
OTHER INFORMATION: Ceres Seq. ID no.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     119
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    105 ALVCVGAIGVHHFRPERVGSTAAALALSAQCPVAIVRPHRV 145
                                  67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        65
                                                                                                                                      29 DEAASRDIPLRLLYAIEPDDPG--YAAHGAAARKLAAAENAVRYAFTAVEAADRPVKVEV 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 43;
                                                                                                                                                                          73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 NOSHKPPSIVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEP---DDPGYAAHGAA- 57
                                                                                                                                                                                         Similarity
                                                                    EITQER------PVTSLIRASAAA-----
                                  QYIQARLHLQRRQAQTSVLGPRAQPMKASASAAPAPARPQKLYPRRAAAALGQVGGGDPA 126
                                                                                                     DASAHGSSP--LLHPHQPLSPSSPFSFHQAVA-VAAASSYGGNYPFAAPDEAGQLSPSQM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AILVVGSHGYGAIKRAVLGSVSDYCAHHAHCTVMIVKKPKI 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----ARKLAA--AENAVRYAFTAVEAADRPVK-VEVEITQERPVTSLIRA--SAAA 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ILPIVDSDLRKIAARVLETAKQLCF-----NKSVNDVTAEVVEGDPRNVLCDAVDKYRA 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SSSSEKQVVLIGIDDSEQSTYALNWALDHFFPSPIFKLVLIHSRPTATSAVGFAGPGAAE
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                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
   --VHHFR--
                                                                                                                                                                                       6.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6.6%; Score 93.5; DB 7; 26.7%; Pred. No. 0.16;
                                                                                                                                                                          27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25; Mismatches
                                                                                                                                                                        Score 93.5; DB 7;
Pred. No. 0.42;
7; Mismatches 96
                                                                                                                                                                                                                                                               12365697
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                                                                                                                                                                          96;
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                                                                                                                                                                                                         Length 333;
                                                                                                                                                                          Indels 137;
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                                                                    -ALVCVGAIG----
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                                                                    113
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US-11-096-568A-27471
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                                                                                                                                                                     Sequence 254, Application US/10454437
Publication No. US20050277115A1
GENERAL INFORMATION:
APPLICANT: Pompejus, Markus
APPLICANT: Kroger, Burkhard
APPLICANT: Schroder, Hartwig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 27471, Application US/11096568A Publication No. US20060048240A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local :
PRIOR APPLICATION NUMBER: US 60/141031
PRIOR FILING DATE: 1999-06-25
PRIOR APPLICATION NUMBER: DE 19931636.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Alexandrov, Nickolai et al.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc_feature
LOCATION: (1)..(174)
OTHER INFORMATION: Ceres
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
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Pred. No. 0.
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TITLE OF INVENTION: Sequence-Determined DNA Fragments and Corresponding Polypeptides
TITLE OF INVENTION: Therby
TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
CURRENT PAPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 21471
APPLICANT: Zelder, Öskar

APPLICANT: Haberhaucr, Gregor

TITLE OF INVENTION: CONTREBACTERIUM GLUTAMICUM GENES ENCODING PROTEINS

TITLE OF INVENTION: INVOLVED IN HOMEOSTASIS AND ADAPTATION

FILE REFERENCE: BGI-128CPCN

CURRENT APPLICATION NUMBER: US/10/454,437

CURRENT FILING DATE: 2003-66-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              129 HADLLVMGSRAYGRIKRMFLGSVSNYCTNHAHCPVVIIKP 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        103 AAALVCVGAIGVHHFRPERVGSTAAALALSAQCPVAIVRP 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              154 IVVEADGSSD--IGVLLGAVMAEARLRDSPVRVVTCRQSGVGDTGDDVRASL--DRWLAR 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10 IVVGIDGSKPAVQAALWAVD----EAASRDIPLRLLYAIEPD------DPGYAAHG---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GLEVPÄFTAAIEQHQKRITDTILEHASQICAEKSVSRVNVKTQVVIGDPKYKICEAVENL 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ---AAARKLAAAENAVRYAFTAVEAADR------PVKVEVEITQERPVTSLIRA--SA 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VVVAVDGSEVSMEALRWALDNLKLSSSSSDSSFVVLH-VQPSPSVAAGVSPGTIPFGGPS 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RLARADGAGDAAAGLQRGAVGRGRRLRAHQVPVVRDR-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PAQPHPALARHLRHRRGGGAGLRPGRLPPPRRRGAPQLPRQRRLPRPAPRLRRRQAPEPV 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PEHRRVQEGRQEASLRRSCRV-VVRPHQQLLLLAVVRRRDLVLPRVRHRVLVPVPVHVAV 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        65; Indels
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PRIOR FILING DATE: 1999-07-08

PRIOR APPLICATION NUMBER: DE 19932125.6

PRIOR FILING DATE: 1999-07-09

PRIOR APPLICATION NUMBER: DE 19932127.2

PRIOR FILING DATE: 1999-07-09

PRIOR FILING DATE: 1999-07-09

PRIOR PRILING DATE: 1999-07-09

PRIOR PRILING DATE: 1999-07-09

PRIOR APPLICATION NUMBER: DE 19932128.0

PRIOR APPLICATION NUMBER: DE 19932129.9

PRIOR APPLICATION NUMBER: DE 19932226.0

PRIOR FILING DATE: 1999-07-19

PRIOR FILING DATE: 1999-07-19

PRIOR FILING DATE: 1999-07-14

PRIOR FILING DATE: 1999-07-14

PRIOR APPLICATION NUMBER: DE 19932922.2

PRIOR APPLICATION NUMBER: DE 19932922.2

PRIOR APPLICATION NUMBER: DE 19932922.2

PRIOR PRILING DATE: 1999-07-14

PRIOR APPLICATION NUMBER: DE 19932922.2

PRIOR APPLICATION NUMBER: DE 19932922.2

PRIOR PRILING DATE: 1999-07-14

Remaining Prior Application data removed - See File Wrapper or PALM.

NUMBER OF SEQ ID NOS: 442

SEQ ID NO 254

LENGTH: 435

TYPEE: PRT

ORGANISM: Corynebacterium glutamicum

US-10-454-437-254
Search completed: March 23, 2006, 06:29:30 Job time: 7.6953 secs
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                                                                                                                                                                                                                                                             228 LLDYLAG---LGRSVHMVV-LSASDQEHVEQLVGAPGNAVLQEAG 268
                                                                                                                                                                                                                                                                                                                                            158 PFDAIIAYELPVILWFLAHGLDVVFIDYPRDPATGVQYYCDSIAAAKSLLDA---VLASR 214
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   46 PDRKPGFDDVPHFGAAVRVPGLKHG----TLVNAA--PLKVLGARGEPNPASSYRFEYI 98
                                                                                                              VLDTVDGGLLTGVIAYAIAGLAVNSSEMFEEIM-----SVLNERG 305
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IRASAAALVCVGAIGVHHFRPERVG-STAAALALSAQ------CPVAI----- 139
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Listing first 45 summaries
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| Abp28871 Streptoco | ABP28871 | տ  | 320 | 16.2 | 278.5 | 44 |
| Adv81996 Streptoco | ADV81996 | 8  | 310 | 16.2 | 278.5 | 43 |
| Adv79843 Streptoco | ADV79843 | œ  | 310 | 16.2 | 278.5 | 42 |
| Adv88590 Streptoco | ADV88590 | œ  | 310 |      | 278.5 | 41 |
| Abp30506 Streptoco | ABP30506 | v  | 310 | 16.2 | 278.5 | 40 |
| Add13373 C. glutam | ADD13373 | 7  | 330 | 16.2 | 279   | 39 |
| Abp60402 Corynebac | ABP60402 | 0  | 330 |      | 279   | 38 |
| Aag91870 C glutami | AAG91870 | 4  | 330 | 16.2 | 279   | 37 |
| Aab79271 Corynebac | AAB79271 | 4  | 330 |      | 279   | 36 |
| Aab86203 C. glutam | AAB86203 | 4  | 330 |      | 279   | 35 |
| Adb07554 Alloiococ | ADB07554 | D  | 312 |      | 279.5 | 34 |
| Adw26675 Fructo-ol | ADW26675 | ø  | 303 | 16.2 | 279.5 | 33 |
| Aau36707 Staphyloc | AAU36707 | 4. | 306 |      | 282   | 32 |
| Aau33897 Staphyloc | AAU33897 | 4  | 303 |      | 282   | 31 |
| Abm72329 Staphyloc | ABM72329 | σ  | 306 | 16.5 | 283   | 30 |
| Abu16314 Protein e | ABU16314 | σ  | 306 | 16.5 | 283   | 29 |
| Ada89524 Staphyloc | ADA89524 | σ  | 306 | 16.5 | 283   | 28 |
|                    | ADS08044 | œ  | 312 | 16.5 | 284   | 27 |
| Abp40738 Staphyloc | ABP40738 | σ  | 312 | 16.5 | 284   | 26 |
| Abu42743 Protein e | ABU42743 | თ  | 306 | 16.5 | 284   | 25 |
|                    |          |    |     |      |       |    |

ALIGNMENTS

RESULT 1 ABU34644

ABU34644;

ABU34644 standard; protein; 339

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19-JUN-2003

(first entry)

Antisense; prokaryotic essential gene; cell proliferation; drug design.

Protein encoded by Prokaryotic essential gene #20171.

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The invention relates to an isolated nucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression of the nucleic acid inhibits proliferation of a cell. Also included are: (1) a vector comprising a promoter operably linked to the nucleic acid encoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) a host cell containing the vector; (3) an isolated polypeptide or its fragment whose expression is inhibited by the
                                                                                                                                                                                                                       Wang L,
Wall D,
                                                                                                                                                                                                                                                                                      21-MAR-2001; 2001US-00815242

06-SEP-2001; 2001US-00948993

25-OCT-2001; 2001US-0342923P

08-FEB-2002; 2002US-00072851

06-MAR-2002; 2002US-0362699P
                                                                                                                               New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.
                                                                                                                                                                                  N-PSDB;
                                                                                                                                                                                                WPI; 2003-029926/02.
                                                                                                                                                                                                                                                                                                                                                                                                03-OCT-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mycobacterium bovis.
                                                                                                      Claim 25; SEQ ID NO 62568; 1766pp; English.
                                                                                                                                                                                                                                                                                                                                                                     21-MAR-2002; 2002WO-US009107
                                                                                                                                                                                                                                                               (ELIT-)
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Trawick JD,
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Forsyth
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RESULT 2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
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Best Local
                                                                                                                 Mycobacterium tuberculosis
                                                                                                                                                                                                                                Protein encoded by Prokaryotic essential gene #22236.
                                                                                                                                                                                                                                                                                                                                                       ABU36709;
                                                                                                                                                                                                                                                                                                                                                                                                          ABU36709 standard; protein; 339
                                                           WO200277183-A2
                                                                                                                                                                             Antisense;
                                                                                                                                                                                                                                                                                        19-JUN-2003 (first entry
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAACNRDDVERFFELAAEPTEVGQDQYVWHPIVNPEASP 339
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PSLTVAEQEQCLDELRGAAASAAFVVASGSLPPGVAADYYQRVADI CRRSSTPLILDTSG
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                                                                                                                                                                       prokaryotic essential gene; cell proliferation; drug design
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 1720; DB 6; Length Pred. No. 3.1e-167;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
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03-OCT-2002.

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PSLTVAEQEQCLDELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSG

PSLTVAEQEQCLDELRGAAASAAFVVASGSLPPGVAADYYQRVADI CRRSSTPLI LDTSG

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cc polypeptide or its fragment whose expression is inhibited by the antisense nucleic acid, (4) an antibody capable of specifically binding ct the polypeptide; (5) producing the polypeptide; (6) inhibited by the compound that inhibited for proliferation or the activity of a gene in an operon required for proliferation, (7) identifying a compound that influences the activity of the gene product or that has an activity against a biological pathway in which a proliferation, or that inhibits cellular proliferation; (8) crequired for proliferation, or that inhibits scallular proliferation or the biological pathway in which hat east compound that inhibits proliferation of an organism acts; (9) manufacturing an antibiotic; (10) profiling a compound's activity; (11) a culture comprising strains in which the gene compound's activity; (11) a culture of comprising the extent to which each of the strains is present in a culture or collection of strains; or (13) identifying the target of a compound that inhibits the compound that inhibits of consideration of an organism. The antisense nucleic acids are useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational confidence or proliferation in cells other than S. aureus, S. typhimurium, crequired for proliferation in cells other than S. aureus, S. typhimurium, compound that inhibits the carget prokaryotic essential genes, Note: The sequence data for this confidence is confidence of the target prokaryotic essential genes, Note: The sequence data for this confidence is confidence proliferation of the printed specification, but was obtained in electronic format directly from WIPO at
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                                                                                                                                                                                                                   Query Match
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Wall D,
                                                                                                                                                                                                                                                              Sequence 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.
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06-SEP-2001; 2001US-0094893.

25-OCT-2001; 2001US-0342923P.

08-FEB-2002; 2002US-00072851.

06-MAR-2002; 2002US-0362699P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of the nucleic acid inhibits proliferation of a cell. Also included are:
(1) a vector comprising a promoter operably linked to the nucleic acid
encoding a polypeptide whose expression is inhibited by the antisense
nucleic acid; (2) a host cell containing the vector; (3) an isolated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the 6213 antisense sequences given in the specification where
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 25; SEQ ID NO 64633; 1766pp; English.
                                                                                                                                                                                                                                                                                                      ftp.wipo.int/pub/published_pct_sequences
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                                                                                                                                                                             Local Similarity
nes 339; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   invention relates to an isolated nucleic acid comprising any one of
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Trawick
                             LGGCSTALFPAGGSTGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYRFVLPG
                                                                                                                     MTEPAAWDEGKPRIITLTWNPALDITTSVDVVRPTEKWRCGAPRYDPGGGGINVARIVHV
    LGGCSTALFPAGGSTGSLLMALLGDAGVPFRVIFIAASTRESFTVNESRTAKQYRFVLPG
                                                                                       MTEPAAWDEGKPRIITLTMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHV
                                                                                                                                                                             Conservative
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Carr G
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                                                                                                                                                                           100.0%; Score 1720; DB 6; 100.0%; Pred. No. 3.1e-167; tive 0; Mismatches 0;
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Forsyth
                                                                                                                                                                                                                   Length 339;
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Xu HH;
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                                                             The present invention describes polypeptides or their fragments, which CC are expressed during the latent stage of a mycobacterial infection, CC and/or nucleic acids encoding the polypeptides, which are useful for CC creating a therapeutic vaccine against tuberculosis. Also described: (1) a therapeutic vaccine against tuberculosis comprising one or more CC polypeptides; (2) a method for treating an animal, including a human CC being, with tuberculosis caused by virulent mycobacteria, e.g. by CC Mycobacterium tuberculosis, M. africanum or M. bovis; (3) a method for CC immunising an animal, including a human being, against tuberculosis CC caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis CC caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis CC caused by virulent mycobacteria in an animal, including a human being; (5) a method for diagnosing previous or ongoing infection with a virulent CC mycobacterium; and (6) a method of diagnosing infection with a virulent CC infection in a subject. The polypeptides have antibacterial activities, and can be used in vaccines and in gene therapy. The polypeptides are CC useful for the manufacture of a therapeutic vaccine for treating an CC individual who is infected by a virulent mycobacterium, e.g. M.

CC The present sequence represents a low oxygen induced antigen, which is creat in the exemplification of the present induced antigen, which is
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  M. tuberculosis low oxygen induced
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3; SEQ ID NO 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 one or more polypeptides or their fragments, which are expressed the latent stage of the mycobacterial infection, and/or nucleic encoding the polypeptides, for a therapeutic vaccine against
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STATENS SERUM INST.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            immunisation; antibacterial; gene therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Stryhn A;
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Sequence 339

Claim 1; SEQ ID NO 19155; 122pp; English

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Best Local S
Matches 339
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                                                  New recombinant DNA construct comprising a promoter positioned to provide for expression of a polynucleotide encoding a polypeptide from a microbial source, useful for producing plants with improved properties.
                                                                                                                                                                                                                                                                                                                           (CAOY/)
(HINK/)
(SLAT/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         homologous recombination; seed oil yield; protein yield; car
nitrogen; phosphorus; photosynthesis; lignin; galactomannan;
bacterial polypeptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Recombinant DNA construct; transformed plant; improved plant property; cold tolerance; heat tolerance; drought tolerance; herbicide; osmosis;
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                                                                                                                                                                                                                                                                                                  CAO Y.
HINKLE G .
SLATER S .
CHEN X.
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                                                                                                                                                                                                                                                                           GOLDMAN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                standard; protein;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LATRHASHRFSSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAAMLLTPG
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No. 3.1e-167;
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                                                                                                                                                                                                                        Goldman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    yield; carbohydrate;
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ID ABM950H7
ID ABM9
AC ABM9
AC ABM9
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ADM
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DT 02-J
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to a recombinant DNA construct comprising a CC promoter functional in a plant cell, where the promoter is positioned to provide for expression of a polynucleotide encoding a polypeptide from a CC microbial source. The invention also relates to a transformed plant CC comprising the recombinant DNA construct and a method of producing a CC transformed plant having an improved property. The plant is a crop plant CC such as maize or sybean. The method of producing a transformed plant CC having an improved property comprises transformed plant with the CC recombinant DNA construct and growing the transformed plant where the CC polynucleotide or polypeptide is useful for improving plant properties. CC The recombinant DNA construct is useful for producing plant properties. CC improved plant properties, e.g. improved cold, heat or drought tolerance, increased resistance to plant disease, better growth rate by modification of the cell cycle pathway with plant growth regulators, increased rate of DM monlogous recombination, modified seed oil or protein yield and/or CC content, improved yield by modification of carbohydrate, nitrogen or phosphorus use and/or uptake, by modification of photosynthesis or by providing improved plant growth and development under at least one stress CC condition, improved lignin production or improved galactomannan CC production. This sequence represents a bacterial polypeptide used in the scope of the invention. Note: The sequence data for this patent did not form part of the printed specification but was obtained in electronic confidence that is the plant a useful according to the light of the printed specification but was obtained in electronic confidence that in the sequence represents a secretal polypeptide used in the sequence represents.
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                           US6833447-B1
                                                                                                         Transgenic
                                                                                                                                                         M. xanthus
                                                                                                                                                                                                    02-JUN-2005
                                                                                                                                                                                                                                                ABM95087;
                                                                                                                                                                                                                                                                                         ABM95087 standard; protein; 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 310
                                                                    Myxococcus xanthus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAAMLLTPGTAACNRDDVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FLLKASVRELRECVGSELLTEPEQLAAAHELIDRGRAEVVVVSLGSQGALLATRHASHRF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TPPPVRTYSSVGAGDSFVAGMTLALARGQSTEDALRWGIASGTAALLTQGTDLCYRADVE
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                                                                                                             plant; DNA replication; gene regulation; gene expression
                                                                                                                                                      protein sequence,
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49.0%; Pred. No. 2.4e-65;
tive 56; Mismatches 100
                                                                                                                                                    seq id 14286.
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Recombinant DNA cold tolerance;

construct; transformed plant; improved plant property; heat tolerance; drought tolerance; herbicide; osmosis;

Bacterial polypeptide #10209.

02-DEC-2004

(first entry)

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RESULT 6
ADS21176
ID ADS2
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AC ADS2
XX
DT 02-E
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CR Bact
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KW Recc
KW Cold
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to a substantially purified nucleic acid molecule encoding a nitrite reductase of SEQ ID NO. 11926. Further disclosed is a recombinant DNA construct for expression of a nitrite reductase gene in a plant cell, and a plant cell comprising the recombinant DNA construct. The nucleic acid is useful for determining gene expression, identifying mutations in a gene of interest, and for constructing mutations in a gene of interest, and for constructing mutations in a gene of interest, and for sexpression. Sequences given in records for SEQ IDs 9692-16825 represent a group of 7134 Mxyococcus xanthus proteins and peptides. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from USPTO
                                                                                                                                          ADS21176 standard; protein; 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 315 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New substantially purified Myxococcus xanthus nucleic acid molecule encoding a nitrite reductase, useful for determining gene expression, identifying mutations in a gene of interest, and for constructing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2005-028716/03
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                                                                                                                                                                                                                                                      RFF-ELAAEP
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Pred. No. 2.5e-65;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       transformed plant having an improved property. The plant is a crop plant CC such as maize or soybean. The method of producing a transformed plant CC having an improved property comprises transforming a plant with the CC recombinant DNA construct and growing the transformed plant, where the polynucleotide or polypeptide is useful for improving plant properties. CC The recombinant DNA construct is useful for producing plants with CC improved plant properties, e.g. improved cold, heat or drought tolerance, tolerance to herbicides, extreme osmotic conditions, pathogens or pests, concreased resistance to plant disease, better growth rate by modification of the cell cycle pathway with plant growth regulators, increased rate of homologous recombination, modified seed oil or protein yield and/or content, improved yield by modification of carbohydrate, nitrogen or phosphorus use and/or uptake, by modification of photosynthesis or by providing improved plant growth and development under at least one stress condition, improved lignin production or improved glant accombination production of photosynthesis or by providing improved lignin production of photosynthesis or by providing the invention. Note: The sequence data for this patent did not form part of the printed specification but was obtained in electronic form part of the printed specification but was obtained in electronic
                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 131; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              provide for expression of a polynucleotide encoding a polypeptide from microbial source. The invention also relates to a transformed plant comprising the recombinant DNA construct and a method of producing a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to a recombinant DNA construct comprising a promoter functional in a plant cell, where the promoter is positioned to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for expression of a polynucleotide microbial source, useful for produc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cao
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 308
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(SLAT/)
(CHEN/)
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GOLDMAN B
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CLDELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGLQH-ISSG 189
                                                                                                                                                                                                                                                                                                        KPRIITLTMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALFP 70
                                                                                                                                                                              AGGSTGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYRFVLPGPSLTVAEQEQ 130
                                                                                                       I GGDTGNHFKALLTEEGIEQITFQIKNWTRENFIVVERSTNNQFRFGMPGSEIYKEEWEQ
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Pred. No. 3.3e
55; Mismatches
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RESULT 7
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06-SEP-2001;
25-OCT-2001;
08-FEB-2002;
                         (1) a vector comprising a promoter operably linked to the nucleic acid encoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) a host cell containing the vector; (3) an isolated polypeptide or its fragment whose expression is inhibited by the antisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular proliferation or the activity of a gene in an operon required for proliferation; (7) identifying a compound that influences the activity of the gene product or that has an activity against a biological pathway required for proliferation, or that inhibits cellular proliferation; (8) identifying a gene required for cellular proliferation or the biological pathway in which a proliferation-required gene or its gene product lies or a gene on which the test compound that inhibits proliferation of an organism acts; (9) manufacturing an antibiotic; (10) profiling a
                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to an isolated nucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression of the nucleic acid inhibits proliferation cell. Also included are:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Wang
Wall
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N-PSDB; ACA26524.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.
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2001US-0342923P.
2002US-00072851.
2002US-0362699P.
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Xu HH;
   the gene
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                                                                                       21-MAR-2001; 2001US-00815242.

06-SEP-2001; 2001US-00948993.

25-OCT-2001; 2001US-0342923P.

08-FEB-2002; 2002US-00072851.

06-MAR-2002; 2002US-0362699P.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Antisense; prokaryotic essential gene; cell proliferation; drug design.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABU20143;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Protein encoded by Prokaryotic essential gene #5670
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                                     ELITRA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAAMLLTPGTAACNRDDVE 310
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                                     PHARM
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Pred. No. 7.6e-52;
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DB; ACA24013.
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Trawick
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Carr G
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                                                                                       Haselbeck R, Yamamoto R,
                                                                                       Ohlaen
Forsyth
                                                                                       32
                                                                                       Zyskind JW;
Xu HH;
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isolate antisense nucleic acids, useful for identifying proteins or a homologous nucleic acids required for cellular proliferation late candidate molecules for rational drug discovery programs or screening

Claim 25; SEQ ID NO 48067; 1766pp; English.

CC the 6213 antisense sequences given in the specification where expression of the nucleic acid inhibits proliferation of a cell. Also included are:

CC (1) a vector comprising a promoter operably linked to the nucleic acid conding a polypeptide whose expression is inhibited by the antisense concluded acid; (2) a host cell containing the vector; (3) an isolated containing the vector; (3) an isolated containing the vector; (3) an isolated containing the vector; (4) an isolated containing the vector; (5) an isolated containing the polypeptide; (6) inhibited by the containing the polypeptide; (6) inhibiting cellular containing the polypeptide; (6) inhibiting cellular containing the polypeptide; (6) inhibiting cellular contiferation; (7) identifying a compound that influences the activity of the gene product or that has an activity against a biological pathway required for proliferation, or that inhibits cellular proliferation; (8) contains acts; (9) manufacturing an antibiotic; (10) profiling a compound that inhibits spend product lies or a gene on which the test compound that inhibits proliferation of an consument of the containing the extent contains acts; (9) an antibiotic; (10) profiling a conduct is overapressed or underexpressed; (12) determining the extent contains acts overapressed or underexpressed; (12) determining the extent contains acts overapressed or underexpressed; (12) determining the extent contains acts overapressed or underexpressed; (12) determining the extent contains in a contains the sector of the contains acts of the acts of the contains acts or contains a to which each of the strains is present in a culture or collection of strains; or (13) identifying the target of a compound that inhibits the proliferation of an organism. The antisense nucleic acids are useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs, or for screening homologous nucleic acids required for proliferation in cells other than S. aureus, S. typhimurium, K. pneumoniae or P. aeruginosa. The present sequence is encoded by one of the target prokaryotic essential genes. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published\_pct\_sequences invention relates to an isolated nucleic acid comprising any one of

Sequence 338 A,

Query Match Best Local :

Similarity

34.2%;

Score 587.5; DB 6; Pred. No. 4.5e-51;

Length

338;

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Matches
                                       270
                                                                                                                   211
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                                                                                                                   STGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYRFVLPGPSLTVAEQEQCLD
F-ELAAE 318
                                                                                                                                                        LKASVRELRECVGSELLTEPEQLAAAHELIDRGRAEVVVVSLGSQGALLATRHASHRFSS
                                                                                                                                                                                                 RTDAMOPSPRYLVLSGSLPPGAPDDLYATLARTAKARGSRVVVDAAGRALQAALKAGVHL
                                                                                                                                                                                                                                    ELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGLQ-HISSGVFL
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                                                                                                                                                                                                                                                                                                                                                                                 IITLTMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALFPAGG
                                    RPAAVCSTVGAGDSFVGGMVWALACGVPFDDACRYALAASAASVERPGTALCTRDDVERI
                                                                         IPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAAMLLTPGTAACNRDDVERF
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                                                                                                  Query Match
Best Local 9
                                                                                   Matches
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Yamamoto RT,
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                                                                                                                                                                    Sequence 310
                                                                                                                                                                                                            ftp.wipo.int/pub/published_pct_sequences
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23-OCT-2000;
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                                                                                                       Similarity
RIITLTMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALFPAG
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; 2000US-0242578P.
; 2000US-0253625P.
; 2000US-0257931P.
; 2001US-0269308P.
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2000US-0206848P.
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Xu HH;
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                                                                                 Score 534.5;
Pred. No. 1.1e
54; Mismatches
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                                                                                                       1.1e-45;
                                                                                                                        DB 4;
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23-MAY-2000;
26-MAY-2000;
23-OCT-2000;
The invention relates to antisense inhibitors of genes essential to prokaryotic cellular proliferation, their use in identifying the genes, their use in the discovery of novel antibiotics, the essential genes themselves and the encoded proteins. The prokaryotes used are Escherichia coli, Staphylococcus aureus, Salmonella typhi, Klebsiella pneumoniae, Pseudomonas aeruginosa and Enterococcus faccalis. The invention is also useful for the identification of potential new targets for antibiotic development. The antisense nucleic acids can also be used to identify proteins used in proliferation, to express these proteins, and to obtain antibodies capable of binding to the expressed proteins. The proteins can
                                                                                                                                                                                                                                                                                                                                                                                   New polynucleotides for the identification and development antibiotics, comprise sequences of antisense nucleic acids.
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N-PSDB; AAS52446.
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                                                                                                                                                                                                                                                                                                                                Example 3; SEQ ID NO 10180; 511pp; English.
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Yamamoto RT,
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22-DEC-2000;
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06-SEP-2001; 2001US-00948993.

25-OCT-2001; 2001US-0342923P

08-FEB-2002; 2002US-00072851.

06-MAR-2002; 2002US-0362699P.
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N-PSDB; ACA32516
                                                                                                                                                                                                                                                                                                                                                                            21-MAR-2002; 2002WO-US009107
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Best Local Similarity

30.9%;

Indels Length 309;

Query Match

Sequence 309 AA;

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CC the 5213 antisense sequences given in the specification where expression CC of the nucleic acid inhibits proliferation of a cell. Also included are: CC (1) a vector comprising a promoter operably linked to the nucleic acid CC encoding a polypeptide whose expression is inhibited by the antisense CC nucleic acid; (2) a host cell containing the vector; (3) an isolated CC polypeptide or its fragment whose expression is inhibited by the CC antisense nucleic acid; (4) an antibody capable of specifically binding CC polypeptide; (5) producing the polypeptide; (6) inhibiting cellular CC proliferation or the activity of a gene in an operon required for CC proliferation; (7) identifying a compound that influences the activity of the gene product or that has an activity against a biological pathway of CC required for proliferation, or that inhibits cellular proliferation; (8) CC identifying a gene required for cellular proliferation or the biological pathway in which a proliferation-required gene or its gene product lies CC organism acts; (9) manufacturing an antibiotic; (10) profiling a compound that inhibits proliferation of an CC compound's activity; (11) a culture comprising strains in which the gene product is overexpressed or underexpressed; (12) determining the extent of the server of the server of the proliferation of the content of the server of the proliferation of the content of the server of the proliferation of the content of the server of the proliferation of the content of the server of the proliferation of the content of the server of the proliferation of the content of the server of the proliferation of the content of the server of the proliferation of the content of the proliferation of the proliferation of the content of the proliferation of the content of the proliferation of the proliferation of the proliferation of the pr
                                                         identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs, or for screening homologous nucleic acids required for proliferation in cells other than S. aureus, S. typhimurium, K. pneumoniae or P. aeruginosa. The present sequence is encoded by one of the target prokaryotic essential genes. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                              to which each of the strains is present in a culture or collection of strains; or (13) identifying the target of a compound that inhibits the proliferation of an organism. The antisense nucleic acids are useful for
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밁 밁 S δ Ś 밁 Ś 8 Ś Ş 밁 Matches 241 182 122 301 191 133 125; 63 13 73 ω RIITLTMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALFPAG ELVKPNQKELSALVNRE-LTQPDDVRKAAQEIVNSGKAKRVVVSLGPQGALGVDSENCIQ FLLKASVRELRECVGSELLTEPEQL-AAAHELIDRGRAEVVVVSLGSQGALLATRHASHR DELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGLQHISS--GV GSTGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYRFVLPGPSLTVAEQEQCL QKIY 304 ERFF VVPPPVKSQSTVGAGDSMVGAMTLKLAENASLEEMVRFGVAAGSAATLNQGTRLCSHDDT FSSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAAMLLTPGTAACNRDDV EEQVLEIESGAILVISGSLPPGVKLEKLTQLISAAQKQGIRCIVDSSGEALSAALAIGNI GATGEHLVSLLADENVPVATVEAKDWTRONLHVHVEASGEOYRFVMPGAALNEDEFRO-L RIYTLTLAPSLDSATITPQIYPEGKLRCTAPVFEPGGGGGINVARAIAHLGGSATAIFPAG Conservative ; Score 531.5; DB 6; ; Pred. No. 2.2e-45; 55; Mismatches 119; 5 '-Gaps 300 309 240 249 181 190 121 132 62

RESULT 12 ADN18198 ID ADN18

ADN18198

standard;

protein;

ADN18198;

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CC microbial source. The invention also relates to a transformed plant CC comprising the recombinant DNA construct and a method of producing a CC transformed plant having an improved property. The plant is a crop plant CC such as maize or soybean. The method of producing a transformed plant CC such as maize or soybean. The method of producing a transformed plant CC such as maize or soybean. The method of producing a transformed plant CC such as maize or soybean. The method of producing a transformed plant with the CC improved property comprises transformed plant, where the CC polynuclectide or polypeptide is useful for improving plant with the CC improved plant properties. CC The recombinant DNA construct is useful for producing plants with CC improved plant properties, e.g. improved cold, heat or drought tolerance, CC increased resistance to plant disease, better growth rate by modification of the cell cycle pathway with plant growth regulators, increased rate of CC content, improved yield by modification of carbohydrate, nitrogen or CC content, improved yield by modification of photosynthesis or by CC providing improved plant growth and development under at least one stress condition, improved lignin production or improved galactomannan CC production. This sequence represents a bacterial polypeptide used in the Scope of the invention. Note: The sequence data for this patent did not forms part of the printed specification but was obtained in electronic CC format from USPTO at sequence data for this patent did not forms.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The invention relates to a recombinant DNA construct comprising a promoter functional in a plant cell, where the promoter is positioned to provide for expression of a polynucleotide encoding a polypeptide from a
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(HINK/)
(SLAT/)
(CHEN/)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacterial
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               recombinant DNA construct comprising a promoter positioned to provide expression of a polynucleotide encoding a polypeptide from a robial source, useful for producing plants with improved properties.
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polypeptide.
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RIITLTMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALFPAG

Query Match Best Local Matches

Local

Similarity

30.9%;

Conservative

55;

Score 531.5; I Pred. No. 2.2e-55; Mismatches

531.5; DB 8

DB 8; 119;

Length Indels

309; 5

Gaps

72 4 Sequence

309

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06-SEP-2001;
25-OCT-2001;
08-FEB-2002;
The invention relates to an isolated nucleic acid comprising any one of the 6213 antisense sequences given in the specification where expressio of the nucleic acid inhibits proliferation of a cell. Also included are (1) a vector comprising a promoter operably linked to the nucleic acid encoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) a host cell containing the vector; (3) an isolated polypeptide or its fragment whose expression is inhibited by the antisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular
                                                                                                                                                                                                                                                                                                                     New antisense nucleic acids, useful for homologous nucleic acids require isolate candidate molecules for rati
                                                                                                                                                                                                                                                                       Claim 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              03-OCT-2002.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Protein encoded by Prokaryotic essential gene #13566
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DB; ACA31909.
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; 2001US-00948993.
; 2001US-0342923P.
; 2002US-00072851.
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quired for cellular proliferation to
rational drug discovery programs.
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Forsyth
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                drug discovery programs, or for screening homologous nucleic acids required for proliferation in cells other than S. aureus, S. typhimurium, K. pneumoniae or P. aeruginosa. The present sequence is encoded by one of the target prokaryotic essential genes. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          to which each of the strains is present in a culture or collection of strains; or (13) identifying the target of a compound that inhibits the proliferation of an organism. The antisense nucleic acids are useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational
                                                                                                                                               Recombinant expression vector; Klebsiella pneumoniae protein;
                          26-AUG-2003.
                                                                                                    Klebsiella pneumoniae
                                                                                                                                                                                                              Klebsiella
                                                                                                                                                                                                                                                          29-JUL-2004
                                                                                                                                                                                                                                                                                                                                        ABO63860 standard; protein; 314 AA
                                                                 US6610836-B1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      311 RFFE 314
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Similarity 41.1%;
25; Conservative 5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VPPPMKSQSTVGAGDSMVGAMTLKLAQGASLLEMTRYGVAAGSAATINQGTRLCSLADTQ 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAAMLLTPGTAACNRDDVE 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LVKPNQKELSALVNRE-LTQPDDVRTAAQELVRTGKARRVVVSLGPQGALAVDESSSVQV 242
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EKVLTIESGALLVISGSLPPGVSTEKLTALIQAAQQRVIRCIVDSSGEALQAALVPGNLE 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGLQH--ISSGVF 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGEHLVSLLADEQVAVETVEAKDWTRQNLHVHVGSSGEQYRFVMPGAKLSDNEFRQ-LE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYRFVLPGPSLTVAEQEQCLD 133
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                                                                                                                                                                                                            pneumoniae polypeptide seqid 10377.
                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Score 531.5; DB 6; ; Pred. No. 2.2e-45; 56; Mismatches 118;
                                                                                                                                                 transcription regulatory element; antibacterial; Vaccine.
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                                                                                                                                      Enterococcus faecalis polypeptide #2976.
                                                                                                                                                                                                    ADH88496;
                                                                                                                                                                                                                               ADH88496 standard; protein; 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New nucleic acid encoding a Klebsiella pneumoniae polypeptide, useful preparing a vaccine composition against Klebsiella pneumoniae.
                               US6617156-B1
                                                            Enterococcus faecalis
                                                                                        antibacterial
                                                                                                        Enterococcus faecalis
                                                                                                                                                                      22-APR-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 314 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; SEQ ID NO 10377; 932pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N-PSDB;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Klebsiella pneumoniae polypeptide of the invention
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                                                                                                                                                                                                                                                                                                                                        DDVERFFE 314
                                                                                                                                                                                                                                                                                                                                                                     SVQVVPPPMKSQSTVGAGDSMVGAMTLRLAENASLEDMVRFGVAAGSAATINQGTRLCSR
                                                                                                                                                                                                                                                                                                                                                                                                   SHRFSSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAAMLLTPGTAACNR
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                                                                                                        infection; transcription regulatory element;
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Best Local S
Matches 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The invention relates to Enterococcus faecalis polynucleotides and polypeptides. The invention also relates to a recombinant expression vector comprising a polynucleotide operably linked to a transcription regulatory element, a cell comprising a recombinant vector, a method for producing an E. faecalis polypeptide, an isolated nucleic acid comprising a sequence not given in the specification, a recombinant vector. The polynucleotides can be used to detect the presence of E. faecalis in a sample. The sequences are useful for preparing a composition for diagnosing or treating Enterococcus faecalis infection. This sequence represents an E. faecalis polypeptide of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New nucleic acid comprising a sequence encoding polypeptide, useful for preparing a composition treating E. fecalis infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Disclosure; SEQ ID NO 6381; 193pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-PSDB;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-AUG-1997;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (DOUC/) DOUCETTE-STAMM L A. (BUSH/) BUSH D.
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                                                                                                 248
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                                                                                                                                                   191 FLLKASVRELRECVGSELLTEPEQLAAAHELIDR---GRAEVVVVSLGSQGALLATRHAS
                                                                                                                                                                                             125 NFDQLIKQÁEIVTISGSLAKGLPSDFÝQELVQKAHAQEVKVLLDTSGDSLRQVLQGPWKP 184
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                                                                                                                                                                                                                                                                                                                                   7
                                                                                                                                                                                                                                                                                                                                                                                                ch 18.7%; Score 322; DB 7; 1 Similarity 29.6%; Pred. No. 6.9e-24; 85; Conservative 51; Mismatches 141
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                                                                                               HRFSSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAA 294
                                                                                                                                                                                                                  ELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGLQHISSG---V 190
                                                                                                                                                                                                                                                                FHGAFIANELKKANIPQAFTSIKEETRDSIAI--LHEGNQTEILEAGPTVSPEEISNFLE
                                                                                                                                YLIKPNLEELEGLLGQDFSENP--LAAVQTALTKPMFAGIEWIVISLGKDGAIAKHHDQF
                                                                YRVKIPTIQAKNPVGSGDATIAGLAYGLAKDAPAAELLKWGMAAGMA 289
                                                                                                                                                                                                                                                                                                                       AA;
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A; Notatus, Francis DNA
A; Molecule type: DNA
A; Residues: 1-309 < BLAT>
A; Cross-references: UNIPROT: P06999;
A; Cross-references: Grain K-12,
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Nature 413, 848-852, 2001
A;Authors: Parry, C.; Quail, M.; Rutherford, K.; Simmonds, M.;
A;Title: Complete genome sequence of a multiple drug resistant A;Reference number: AB0502; MUID:21534947; PMID:11677608
A;Accession: AB0707
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                                                                                                                                                              Science 277, 1453-1462, 1997
A,Title: The complete genome sequence of Escherichia coli K-12
A,Reference number: A64720; MUID:97426617; PMID:9278503
A,Recession: C64931
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A;Molecule type: DNA
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th, T.; Connerton, P.; Cronin, A.; Davis, P.; Davies, R.M.; Dowd,
                                          R;Daldal,
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    Nucleotide
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Pred. No. 2.5e-31;
                                                             UNIPARC:UPI000012DB3D; substrain MG1655
                                                                                                                                             sequence
  pfkB
encoding the minor phosphofructokinase
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                                                                                                                                               translation
                                                                                  GB:AE000267; GB:U00096;
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A;Status: preliminary
A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-309 <STO>
A;Cross-references: UNIPROT:Q8XE22; UNIPARC:UPI0000DD02BF; GB:AE005174; NID:g12515736; PI
A;Experimental source: strain O157:H7, substrain EDL933
C;Genetics:
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6-phosphofructokinase II, suppressor of pfkA [imported] - Escherichia coli (;Speciles: Escherichia coli (;Speciles: Escherichia coli C;Date: 16-Feb-2001 #sequence_revision 16-Feb-2001 #text_change 09-Jul-2004 (;Accession: A85781 #sequence_revision 16-Feb-2001 #text_change 09-Jul-2004 (;Accession: 
A;Title: Genome sequence of enterohemorrhagic Escherichia A;Reference number: A85480; MUID:21074935; PMID:11206551 A;Accession: A85781
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C;Superfamily: 6-phosphofructokinase 2
C;Keywords: glycolysis; phosphotransferase
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A;Cross-references: UNIPARC:UPI000016F3C6; GB:K00128; NID:g147149; PIDN:AAA24320.1; PID:C;Comment: This enzyme is not to be confused with 6-phosphofructo-2-kinase (EC 2.7.1.105)
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A;Title: Molecular cloning of the gene for phosphofructokinase-2
A;Reference number: I56378; MUID:83294514; PMID:6310120
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A;Residues: 1-25,'ENCAVPHRCSN',37-40,42-154,'LRKNK',160,'SAASSTVL',169,'QG',172-244,'AL',
A;Cross-references: UNIPARC:UDI000016F3C7; GB:K02500; NID:g147151; PIDN:AAA24321.1; PID:
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K.; Apodaca,
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gasawara, N.; Yasunaga, T.; Kuhara, S.; Shiba, T.; Hattori, M.; Shinagawa, H. DNA Res. 8, 11-22, 2001

A;Title: Complete genome sequence of enterohemorrhagic Escherichia coli O157:H7

A;Reference number: A99629; MUID:21156231; PMID:11258796

A;Accession: E90932
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E90932
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A;Residues: 1-309 <HAY>
A;Crose-references: UNIPROT:QBXE22; UNIPARC:UPI00000D02BF; GB:BA000007; PIDN:BAB35852.1
A;Experimental source: strain O157:H7, substrain RIMD 0509952
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C;Superfamily:
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Similarity 41.1%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VVPPPVKSQSTVGAGDSMVGAMTLKLAENASLEEMVRFGVAAGSAATLNQGTRLCSHDDT
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                                                                                        DELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGLQHISS--GV 190
                                                                                                                                                     GSTGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYRFVLPGPSLTVAEQEQCL 132
                                                                                                                                                                                                                   RIITLTMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALFPAG 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QKIY 304
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGLQHISS--GV 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RIITLTMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALFPAG 72
                                                                                                                                                                                      RIYTLTLAPSLDSATITPQIYPEGKLRCTAPVFEPGGGGINVARAIAHLGGSATAIFPAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FSSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAAMLLTPGTAACNRDDV 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RIYTLTLAPSLDSATITPQIYPEGKLRCTAPVFEPGGGGINVARAIAHLGGSATAIFPAG
                                                                                                                         GATGEHLVSLLADENVPVATVEAKDWTRQNLHVHVEASGEQYRFVMPGAALNEDEFRQ-L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATGEHLVSLLADENVPVATVEAKDWTRQNLHVHVEASGEQYRFVMPGAALNEDEFRQ-L
ELVKPNQKELSALVNRE-LTQPDDVRKAAQEIVNSGKAKRVVVSLGPQGALGVDSENCIQ
                                                                                                                                                                                                                                                                                                                6-phosphofructokinase 2
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Kasunaga, T.; Kuhara,
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                                                                                                                                                                                                                                                    54; Mismatches
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; Pred. No. 4.8e-31;
54; Mismatches 120
                                                                                                                                                                                                                                                                   Score 530.5; DB 2
Pred. No. 4.8e-31;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kurokawa, K.; Ishii,
Shiba, T.; Hattori,
                                                                                                                                                                                                                                                                                DB 2;
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A;Genome: plasmid
A;Note: plasmid
A;Note: plasmid MP1
C;Superfamil....
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Experimental source: strain C; Genetics:
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C75626
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1-phosphofructokinase - Deinococcus radiodurans (strain R1)
C;Species: Deinococcus radiodurans
C;Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change
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Best Local
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                                                                                                                           VVPPPVKSQSTVGAGDSMVGAMTLKLAENASLEEMVRFGVAAGSAATLNQGTRLCSHDDT 300
                                                                                                                                                                                                                                                                                             PAGGSTGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYRFVLPGPSLT---VA 126
                                                                                                                                                                                                                                                                                                                              GTPRVLTLTLNPALDLTVRADGWRPNTVNSGQTLHLTAGGKGVNVASFLADWGLPVTASG
                                                                                                                                                                                                                                                                                                                                               GKPRIITLTWMPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALF
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PARDELAGY - - - AAQVT
                             CNRDDVERFFELAAEPT 320
                                                             PGATVQAKPPHVQVVSTVGAGDAMVAGLVSAHLDSLPLPDAARRATSFSVSTITRLGAHL
                                                                                              RHASHRFSSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAAMLLTPGTAA
                                                                                                                                                                                            ELHAQLDAL--CESHDAFVLA-GSLPPGIAPDFYTELVAKLRGAGKFVALDTSGAALTAA
                                                                                                                                                                                                                           EQEQCLDELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGL-QH
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                                                                                                                                                                                                                                                                                                                                                                                                         18.5%;
                                                                                                                                                                                                                                                                                                                                                                                               44; Mismatches
311
                                                                                                                                                                                                                                                                                                                                                                                                             Score 318.5; DB 2
Pred. No. 9.7e-16;
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Utterback,
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                                                                                                                                                                                                                                                                                                                                                                                                                               315;
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T.; Zalewski,
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                                                                                                                              237
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Ma.

PI

tagatose-6-phosphate kinase [imported] - Clostridium acetobutylicum C;Species: Clostridium acetobutylicum C;Species: Clostridium acetobutylicum C;Date: 14-Sep-2001 #sequence\_revision 14-Sep-2001 #text\_change 09-JC;Accession: B97263
C;Accession: B97263
R;Nolling, J; Beneton, G.; Omelchenko, M.V.; Markarova, K.S.; Zeng, J. Daly, M.J.; Bennett, G.N.; Koonin, E.V.; Smith, D.R.
J. Bacteriol. 183, 4823-4838, 2001
A;Title: Genome Sequence and Comparative Analysis of the Solvent-Pro

Solvent-Producing

Bacterium

Clos

\_change 09-Jul-2004

Q.; Gibson,

<del>بر</del> ::

B97263

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tagging - 6-phosphate kinase - Streptococcus mutans
C;Species: Streptococcus mutans
C;Species: Streptococcus mutans
C;Date: 10-Jun-1933 #sequence_revision 18-Nov-1994 #text_change 09-Jul-2004
C;Accession: B43258; S27703
R;Rosey, B.L.; Stewart, G.C.
J. Bacteriol. 174, 6159-6170, 1992
A;Fitle: Nucleotide and deduced amino acid sequences of the lacR, lacABCD, and lacFE gen onents of the lactose operon of Streptococcus mutans.
A;Reference number: A43258; MUID:93015655; PMID:1400164
A;Accession: E43258
A;Status: preliminary; not compared with conceptual translation
A;Rosidues: 1-310 < ROS>
A;Cross-references: UNIPROT:P26421; UNIPARC:UPI000012E1D7; EMBL:M80797; NID:g153671; PID
A;Note: sequence extracted from NCBI backbone (NCBIP:115200)
C;Gene:lacC
C;Superfamily: 6-phosphofructokinase 2
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A;Cross-references: UNIPROT:097F04; UNIPARC:UPI00000CA6AC; GB:AE001437; PIDN:AAK80893.1
A;Experimental source: Clostridium acetobutylicum ATCC824
C;Genetics:
A;Gene: CAC2951
C;Superfamily: 6-phosphofructokinase 2
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A;Accession: B97263
A;Status: preliminary
A;Molecule type: DNA
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FFEKLLPKLEVVAISGSLPKGVPVDYYSQMIAICKQHQVPIVLDCSGQALLEVLNGAAKP
                                         ELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGLQHISSGV---
                                                                                    KLGEFLEAELDKSAIKHSFYKISAETRNCIAILHG--GYQTEILEQGPYVSAKESKGFLE
                                                                                                                                                                                MLTVTMNPSIDIAYQLDDLKVDTVNRVIETHKTPGGKGLNVTRVLSQLGDDVLASGLLGG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAA 294
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ilarity 28.9%;
Conservative 5
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                                                                                                                                                                                                                                                                       17.8%; Score 307; DB 2; 29.1%; Pred. No. 6.4e-15; tive 52; Mismatches 159
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Pred. No. 4.2e-15;
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fructose 1-phosphate kinase fruB - Bacillus subtilis ()Species: Bacillus subtilis ()Species: Bacillus subtilis ()Species: Bacillus subtilis ()Date: 05-Dec-197 #sequence_revision 05-Dec-1997 #text_change 09-Jul-2004 ()Accession: A69627 ()Accession: A69627 ()Accession: A69627 ()Accession: A69627 ()Accession: A.; Moszer, I.; Albertini, A.M.; Alloni, G.; Azevedo, V.; Berterc R;Kunst, F.; Ogasawara, N.; Moszer, I.; Albertini, A.M.; Alloni, G.; Azevedo, V.; Carter, N.M.; Choi C.; Brouillet, S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, N.M.; Choi A.; Ehrlich, S.D.; Emmerson, P.T.; Entian, K.D.; Errington, J.; Fabret, C.; Ferrari, E. Nature 390, 249-256, 1997
                                                                                                                                                                                          RESULT 10
A69627
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A;Cross-references: UNIPROT:Q97MG6; UNIPARC:UPI00000C9DD1;
A;Experimental source: Clostridium acetobutylicum ATCC824
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A;Title: Genome Sequence and Comparative Analysis of the A;Reference number: A96900; MUID:21359325; PMID:21359325
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C;Superfamily: 6-phosphofructokinase 2
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C;Species: Clostridium acetobutylicum
C;Date: 14-Sep-2001 #sequence_revision 14-Sep-2001 #text_change 09-Jul-2004
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27.3%; Pred. No. 1.1e-14;
ative 64; Mismatches 146;
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C;Accession: D89841

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C;Accession: D89841

C; Shiba, T; Hattori, M; Cogasawara, N; Hayashi, H; Hiramatsu, K.

Lancet 357, 1225-1240, 2001

A;Title: Whole genome sequencing of meticillin-resistant Stapylococcus aureus.

A;Accession: D89841

A;Accession: D89841
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Authors: Foulger, D.; Fritz, C.; Fujita, M.; Fujita, Y.; Fuma, S.; Galizzi, A.; Galler iech, J.; Harwood, C.R.; Henaut, A.; Hilbert, H.; Holsappel, S.; Hosono, S.; Hullo, M.F. Koetter, P.; Koningstein, G.; Krogh, S.; Kumano, M.; Kurita, K.; Lapidus, A.; Lardinois, A;Authors: Lauber, J.; Lazarevic, V.; Lee, S.M.; Levine, A.; Liu, H.; Masuda, S.; Maueelly, M.; Ogawa, K.; Ogiwara, A.; Oudega, B.; Park, S.H.; Parro, V.; Pohl, T.M.; Portetelle Rieger, M.; Rivolta, C.; Rocha, E.; Roche, B.; Rose, M.; Sadaie, Y.; Sato, T.; Scanlon, A;Authors: Schleich, S.; Schroeter, R.; Scoffone, F.; Sekiguchi, J.; Sekowska, A.; Seror akeuchi, M.; Tamakoshi, A.; Tanaka, T.; Terpstra, P.; Tognoni, A.; Tosato, V.; Uchiyama, T.; Winters, P.; Wipat, A.; Yamamoto, H.; Yamane, K.; Yasumoto, K.; Yata, K.; Yoshida, K.; A;Authors: Yoshikawa, H.F.; Zumstein, E.; Yoshikawa, H.; Danchin, A.; A;Title: The complete genome seguence of the Gram-positive bacterium Bacillus subtilis. A;Accession: A6980; MUID:98044033; PMID:9384377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                fructose 1-phosphate kinase [imported] - Staphylococcus aureus (strain N315)
C;Species: Staphylococcus aureus
C;Date: 10-May-2001 #sequence_revision 10-May-2001 #text_change 09-Jul-2004
C;Accession: D89841
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D89841
                                                   A;Molecule type: DNA
A;Residues: 1-306 <KUR>
A;Residues: 1-306 <KUR>
A;Cross-references: UNIPROT:Q9KWK1; UNIPARC:UPI00000CA99D; GB:BA000018;
A;Experimental source: strain N315
C;Genetics:
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C;Superfamily: 6-phosphofructokinase
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;Superfamily:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 109
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14 IITLTMNPALDITTSVDVVRPTEKMRCGA---PRYD---PGGGGINVARIV---HVLGGC 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        T-----VAEQEQCLDELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TSGGG-LQHISSGVFLLKASVRELRECVGSELLTEPEQLAAAHELIDRGRAEVVVVSLGS 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SDEDFKAFLEQFQSLQE-----GDIVVLAGSIPSSLPHDTYEKIAEACKQQNARVVLD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IYTVTLNP-----SVDYIVHVEDFTVGGLNRSSYDTKYPGGKGINVSRLLKRHHV---A 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DGALLFTNEAVY - FANVPKGKLVNSVGAGDSVVAGFLAGISKQLPLEEAFRLGVTSGSA-
6-phosphofructokinase
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K.;
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Science 294, 849-852, 2001
A; Authors: Kreft, J.; Kuhn, M.; Kunst, F.; Kurapkat, G.; Madueno, E.; ok, C.; Schlueter, T.; Simoes, N.; Tierrez, A.; Vazquez-Boland, J.A.; A; Title: Comparative genomics of Listeria species.
A;Reference number: AB1077; MUID:21537279; PMID:11679669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: UNIPROT:Q928V2; UNIPARC:UPI00000CC878; GB:AL592022; PIDN:CAC97657.1; A;Experimental source: strain Clip11262 C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C;Accession: AI1735
R;Glaser, P.; Frangeul, L.; Buchrieser, C.; Amend, A.; Baquero, F.; Berche, P.; Dominguez-Bernal, G.; Duchaud, B.; Durand, L.; Dussurget, O.; Entian, K.D.;
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                               h 16.0%; Score 275; DB 2; Similarity 27.3%; Pred. No. 1.3e-12;
                                                                                                                             ELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGG-LQHISSGVFL
                                                                                                                                                                                                                        STGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYRFVLPGPSLTVAEQEQCLD 133
                                                                                                                                                                                                                                                                                                                IITLTMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALFPAGG
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  IKPNHHELAELFGVKLDSVEDLIPYGKKCLELG-AQHVIVSMAGDGALLFTGEDVYFADA
                                         LKASVRELRECVGSELLTEPEQLAAAHELIDRGRAEVVVVSLGSQGALLATRHASHRFSS 252
                                                                                      EVMDKVTAGDIVILSGSVPPSLGNDFYDKIIQICKEKQANFMIDTTGQELLDALPNRPIL
                                                                                                                                                                              FTGGFIKDWLKNEGIQTGFVIVKDDTRINIKLKHGEETEINGL---GPAISEKEIKEFL-
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26.6%; Pred. No. 3.4e-13;
                                                                                                                                                                                                                                                                                                                                                               58; Mismatches 141;
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Voss, H.; Wehland,
    236
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Fsihi, H.
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C;Species: Staphylococcus aureus
C;Species: Staphylococcus aureus
C;Date: 28-Feb-1990 #sequence_revision 28-Feb-1990 #text_change 09-Jul-2004
C;Accession: S04358
R;Rosey, E.L.; Stewart, G.C.
Nucleic Acids Res. 17, 3980, 1989
A;Title: The nuclectide sequence of the lacC and lacD genes of Staphylococcus aureus.
A;Reference number: S04358; MUID:89282406; PMID:2543958
A;Accession: S04358
A;Accession: S04358
A;Accession: S04358
A;Residues: 1-310 <ROS>
A;Cross-references: UNIPROT:P11099; UNIPARC:UPI0000054BF6; EMBL:X14827; NID:g46604; PIDN
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1-phosphofructokinase (EC 2.7.1.56) - Xanthomonas campestris pv. campestris N,Alternate names: fructose-1-phosphate kinase C;Species: Xanthomonas campestris pv. campestris C;Date: 16-Sep-1992 #sequence_revision 16-Sep-1992 #text_change 09-Jul-2004 C;Accession: A4094
C;Accession: A4094
R;de Crecy-Lagard, V; Bouvet, O.M.M.; Lejeune, P.; Danchin, A.
J. Biol. Chem. 266, 18154-18161, 1991
J. Biol. Chem. 266, 18154-18161, 1991
A;Title: Fructose catabolism in Xanthomonas campestris pv. campestris. Sequence of the control of the catabolism in Xanthomonas campestris pv. campestris.
                                                                                                                                                                                                                                                                                                                                                        RESULT 14
$04358
lacC protein - Staphylococcus aureus
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C;Superfamily: 6-phosphofructokinase
C;Keywords: phosphotransferase system
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A; Residues: 1-318 <DEC>
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Superfamily: 6-phosphofructokinase
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Pred. No. 4.3e-12;
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tagatose-6-phosphate kinase [imported] - Staphylococcus aureus (strain N315)

(;Species: Staphylococcus aureus

(;Date: 10-May-2001 #sequence_revision 10-May-2001 #text_change 09-Jul-2004

(;Accession: D90015

R;Kuroda, M.; Ohta, T.; Uchiyama, I.; Baba, T.; Yuzawa, H.; Kobayashi, I.; Cui, L.;

ma, A.; Mizutani-Ui, Y.; Kobayashi, N.; Sawano, T.; Inoue, R.; Kaito, C.; Sekimizu,

C.; Shiba, T.; Hattori, M.; Ogasawara, N.; Hayashi, H.; Hiramatsu, K.

Lancet 357, 1225-1240, 2001

A;Title: Whole genome sequencing of meticillin-resistant Stapylococcus aureus.

A;Reference number: A89758; MUID:21311952; PMID:11418146
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A;Cross-references: UNIPROT:Q99876; UNIPARC:UPI00000CAD5B; A;Experimental source: strain N315
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C;Superfamily: 6-phosphofructokinase
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                                                                                                                         SSGVF---LLKASVRELRECVGSELLTEP--EQLAAAHELIDR---GRAEVVVVSLGSQG
                                                                                                                                                               HFEQLLEKVEA-----VAISGSLPKGLNQDYYAQIIERCQNKGVPVILDCSGATLQTV
                                                                                                                                                                                                   --EQCLDELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGLQHI 186
                                                                                                                                                                                                                                                                                                                                                                     IITLTMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALFPAGG
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AFAKHNHTFYRVNIPTINVLNPVGSGDSTVÅGIT
                                      ALLATRHASHRESSIPMTAVSGVGAGDAMVAAIT 272
                                                                              LENPYKPTVIKPNISEL-----YQLLNQPLDESLESLKQAVSQPLFEGIEWIIVSLGAQG
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28.1%; Pred. No. 4.6e-12;
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Pred. No. 5.4e-12;
0; Mismatches 118;
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Job time : 14.4872 secs

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Q63CY0_BACC2
Q67Q12 SYWH
Q4NKX2_9MICC
Q82F5 STRAW
Q8ESO6_OCEIH
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O7tz43 mycobacteri
O8635 mycobacteri
Q4j5v5 azotobacteri
Q4nkq8 arthrobacte
Q6ncu0 rhodopseudo
O63iv9 burkholderi
Q62ec2 burkholderi
Q82ec2 burkholderi
Q89189 bradyrhizob
Q57908 salmonella
Q8z6h7 salmonella
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Q8z6h7 salmonella
Q8ph99 escherichia
Q8h20 secherichia
Q8h20 escherichia
Q8h20 streptomyce
Q4ndb8 arthrobacte
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| •                                      | • •   | •                                     | • •   | Quer<br>Best<br>Matc  | ннаво   | טי≖ שישטט  | H TO K SZ —  | 230832  | Q000F   | SULT  | CCCCCC44444<br>CCCCC44444<br>CCCCCC44CCCC40  |
| 181 GGLQHISSGVFLLKASVRELRECVGSELLTEPEQ | 121 PSLTVAEQEQCLDELRGAAASAAFVVASGSLPPG                  | 61 LGGCSTALFPAGGSTGSLLMALLGDAGVPFRVIP | 1 MTBPAAWDEGKPRIITLTWNPALDITTSVDVVRPTEKMRCGÅPRYDPGGGGINVARIVHV<br>              | Query Match 100.0%; Score 1720; Best Local Similarity 100.0%; Pred. No. 2.8 Matches 339; Conservative 0; Mismatches | InterPro; IPR002173; PfkB. InterPro; IPR011611; PfkB region. Pfam; PF00294; PfkB; 1. PROSITE; PS00583; PFKB KINASES 1; 1. Complete proteome; Kinase; Transferase. SEQUENCE 339 AA; 35401 MW; D7738363FF73 | Parkhill J., Barrell B.G., Cole S.T., Gordon "The complete genome sequence of Mycobacter. Proc. Natl. Acad. Sci. U.S.A. 100:7877-7882 EMBL, BX248341; CAD96907.1; -; Genomic_DNA. GO; GO:0016301; F:kinase activity; IEA. GO; GO:0016740: F:transferase activity: IEA. | RP (1)  RP (1)  RP (1)  RP (1)  RP (2)  RP (2)  RC STRAIN=AF2122/97;  RX MEDLINE=22709107; PubMed=12788972; DOI=10.1073/pnas.1130426100;  RX MEDLINE=22709107; PubMed=12788972; DOI=10.1073/pnas.1130426100;  RA Garnier T., Eiglmeier K., Camus JC., Medina N., Manscor H.,  RA Pryor M., Duthoy S., Grondin S., Lacroix C., Monsempe C., Simon S.,  RA Pryor M., Duthoy S., Grondin S., Lacroix C., Monsempe C., Simon S.,  RA Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler P.R. | Name=pfkB; OrderedLocusNames=Mb2054c;<br>Name=pfkB; OrderedLocusNames=Mb2054c;<br>Mycobacterium bovis.<br>Bacteria; Actinobacteria; Actinobacteridae;<br>Corynebacterineae; Mycobacteriaceae; Mycoba<br>Mycobacterium tuberculosis complex.<br>NCBI TaxID=1765; | O7TZ43; 01-OCT 2003 (TrEMBLrel. 25, Created) 01-OCT-2003 (TrEMBLrel. 25, Last sequence upon 101-MAR-2004 (TrEMBLrel. 26, Last annotation Probable phosphofructokinase pfkB (PHOSPHOH) | ALIGNMENTS ULT 1 Z43 MYCBO Q7TZ43 MYCBO PRELIMINARY; PRT; 339 A | 32 314 18.3 303 2 0733B5 BACC1 33 312.5 18.2 315 2 06AG92 LEIXX 34 312 18.1 303 2 Q6HP93 BACHX 35 312 18.1 303 2 Q6HP93 BACCZ 36 311 18.1 303 2 Q6HW7 BACCZ 37 309.5 18.0 308 2 097FF04—CLOAB 38 309.5 18.0 316 2 097VT9 NOCFA 39 308 17.9 303 2 05KYW2 GEOKA 40 307 17.8 310 1 LACC STRNU 41 305 17.7 303 2 04MY4 BACCE 42 304 17.7 305 2 04MY4 BACCE 42 304 17.7 305 2 04MY4 BACCE 43 304 17.7 305 2 04MP4 PSEPK 44 304 17.7 315 2 04BP94 PSEPK 45 300.5 17.5 300 2 06FPFO_COREF |
| QLAAAHELIDRGRAEVVVVSLGSQGAL 240        | BLRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSG 180<br> | PIAASTRESFTVNESRTAKQYRFVLPG 120       | PTEKMRCGÅPRYDPGGGGINVARIVHV 60<br>          <br> PTEKMRCGÅPRYDPGGGGINVARIVHV 60 | DB 2; Length 339;<br>8e-109;<br>0; Indels 0; Gaps 0;  | 3DADD CRC64;  | on S.V., Hewinson R.G.;<br>rium bovis.";<br>2(2003).   | 1073/pnas.1130426100;<br>ina N. Mansoor H.,<br>Monsempe C., Simon S.,<br>Keating L., Wheeler P.R.,   | ; Actinomycetales;<br>acterium;   | update)<br>n update)<br>HEXOKINASE)   | AA.   | Q733b5 bacillus ce Q6ag92 leifsonia x Q6hf93 bacillus th Q636v8 bacillus ce Q81ww7 bacillus ce Q81ww7 bacillus an Q97f04 clostridium Q5yvt9 nocardia fa Q5kyw2 geobacillus p26421 streptococc Q4mjy4 bacillus ce Q97mg6 clostridium Q8pp6 corynebacte Q6y9b0 borrelia he   |

밁

181 GGLQHISSGVFLLKASVRELRECVGSELLTEPEQLAAAHELIDRGRAEVVVVSLGSQGAL 240

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RESULT 2

O86352_MYCTU
ID O86352_OYDTLA
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DE COMPLETION OF A
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RX MCDLINE-982959
RA COLE S.T., BAC
RA HARTIS D.E., G
RA HARTIS D.E., G
RA HARTIS D.E., G
RA HARTIS D.E., G
RA HOLVOYS J.E., HC
RA COMPLETE S.C., HC
RA SUSTEN J.E., G
RA HICKEY E.K., F
RA HICKEY E.K., F
RA Gill J., Mikul
RA Fleischmann R.
RA HICKEY E.K., F
RA SAIZBER C.M.;
RA GILL J. BACTERIOL
DR EMBL; BAS00516
DR TIGR; MT2088;
DR TUBERCULISE; F
DR GO; GO:0016501
DR INTERPO; IPR(
DR PAME, PF00294;
DR PONSITE; PS005
KW Complate POCCE
SO SEQUENCE 335
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                                                                          Matches
                                                                                                Query Match
Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUCLEOTIDE SEQUENCE.

STRAIN=CDC 1551 / Oshkosh;

MEDLINE=22206494; PubMed=12218036;

MEDLINE=22206494; PubMed=12218036;

DOI=10.1128/JB.184.19.5479-5490.2002;

Pleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O.,

Peterson J.D., DeBoy R.T., Dodson R.J., Gwinn M.L., Haft D.H.,

Hickey E.K., Kolonay J.F., Nelson W.C., Umayam L.A., Ermolaeva M.D.,

salzberg S.L., Delcher A., Utterback T.R., Weidman J.F., Khouri H.M.,

Scholl J., Mikula A., Bishai W., Jacobs W.R. Jr., Venter J.C.,
                                                                                                                                                                                                                                                                                                                                                                                  laboratory strains.";

J. Bacteriol. 184:5479-5490(2002).

EMBL; BX842578; CAA17243.1; -; Gen

EMBL; AE000516; AAK46367.1; -; Gen

PIR; D70942; D70942.
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01-NOV-1998 (TrEMBLrel. 08, Last sequence update)
13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
Probable phosphofrucrokinase PfkB (PHOSPHOHEXOKINASE) (EC 2.7.1.-)
(Carbohydrate kinase, PfkB family).
Name=pfkB; OrderedLocusNames=MT2088, Rv2029c;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=98295987; PubMed=9634230; DOI=10.1038/31159; Cole S.T., Brosch R., Parkhill J., Garnier T., Churc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Corynebacterineae; Mycobacteriaceae; Mycobacterium tuberculosis complex.
                                                                                                                                                                                                                 InterPro; IPR011611; PfkB_region.
Pfam; PF00294; PfkB; 1.
PROSITE; PS00583; PFKB_KINASES_1; 1.
                                                                                                                                                                                                                                                                                      TubercuList; Rv2029c; -
GO; GO:0016301; F:kinase activity;
InterPro; IPR002173; PfkB.
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Whole-genome comparison of Mycobacterium tuberculosis clinical and
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                                                                                                Similarity
MTEPAAMDEGKPRIITLIMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHV
                                                                                                                                                                     proteome; Kinase; Tra
339 AA; 35401 MW;
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Query Match
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Copeland A., Lucas S., Lapidus A., Barry K., Detter C., (
Hammon N., Israni S., Pitluck S., Richardson P.,
Submitted (JUN-2005) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                       DOE Joint Genome Institute;
Submitted (FEB-2003) to the
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Copeland A., Lucas S., Lapidus A., Barry K., Detter C.,
Hammon N., Israni S., Pitluck S., Richardson P.;
"Sequencing of the draft genome assembly of Azotobacter
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Bacteria, Proteobacteria, Ga
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13-SEP-2005
                                                  SEQUENCE
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                                                                                                                                                                                                                                                                                 STRAIN=AVOP;
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                                                                                                                                           CAUTION: The sequence shown here is derived : EMBL/GenBank/DDBJ whole genome shotgun (WGS)
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RESULT 4
QANKQ8 9MICC
QANKQ8 9MICC
QANKQ8,
AC QANKQ8;
DT 13-SEP-2005 (TrEMBLrel. 31,
DE CArbohydrate kinase, PikB p.
GN Arthrobacter Bp. PB24,
OC Bacteria; Actinobacteria; A.
OC Micrococcineae; Micrococcac,
OX NCBI_TAXID=290399;
RN [1]
RP NUCLEOTIDE SEQUENCE.
RC STRAIN=FB24;
RA Hammon N., Israni S., Pitlu
RA Copeland A., Lucas                                                                                                                                                                                     Query Match
Best Local S
Matches 145
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Matches
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"Annotation of the draft genome assembly of Arthrobacter Submitted (JUN-2005) to the EMBL/GenBank/DDBJ databases.

-I- CAUTION: The sequence shown here is derived from an EMBL/GenBank/DDBJ whole genome shotgun (WGS) entry wh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Copeland A., Lucas S., Lapidus A., Barry K., Detter C., G
Hammon N., Israni S., Pitluck S., Richardson P.;
"Sequencing of the draft genome assembly of Arthrobacter
Submitted (JUN-2005) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13-SEP-2005 (TrEMBLrel. 31, Created)
13-SEP-2005 (TrEMBLrel. 31, Last sequence update)
13-SEP-2005 (TrEMBLrel. 31, Last sequence update)
13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
Carbohydrate kinase, PFKB precursor.
ORFNames=ArthDRAFT 3345;
Arthrobacter sp. FB24.
Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US DOE Joint Genome Institute (JGI-PGF);
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                                                                                             GKPRIITLTMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALF
PAGGSTGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYRFVLPGPSLTVAEQE 129
                                                         GSKPILTLTVNPALDISTSTEQVSSGHKLRCGASRLDPGGGGINVARVIQRLGGQTLAVY
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                                                                                                                                                                                                                 38.8%; Score 667; DB 2; Length 347; 46.8%; Pred. No. 2e-37;
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                                                                                                                                                                                                                                                                                                           Potential.
; E8AE1A8051957A53 CRC64;
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B; Mismatches
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PROSITE; PS00583; PFKB KINASES 1; 1.

PROSITE; PS00584; PFKB KINASES 2; UNKNOWN 1.

Complete proteome; Kinase; Transferase.

SEQUENCE 312 AA; 32563 MW; 011DFZ4E5D8CD
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EMBL, BX572594; CAESE33.1; -; Genomic DNA.

GO; GO:0003872; F:6-phosphofructokinase activity;
GO; GO:0016301; F:kinase activity; IEA.
GO; GO:0016740; F:transferase activity; IEA.
GO; GO:0016740; F:transferase activity; IEA.
GO; GO:0005975; P:carbohydrate metabolism; IEA.
InterPro; IPR002173; FfkB.
InterPro; IPR011611; PfkB_region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Larimer F.W., Chain P., Hauser L., Lamerdin J.E., Malfatti S., Land M.L., Pelletier D.A., Beatty J.T., Lang A.S., Tabita F.R., Gibson J.L., Hanson T.E., Bobst C., Torres y Torres J.L., Peres Harrison F.H., Gibson J., Harwood C.S.; "Complete genome sequence of the metabolically versatile photosynthetic bacterium Rhodopseudomonas palustris.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     05-UUL-2004 (TrEMBLrel. 27, Created)
05-UUL-2004 (TREMBLrel. 27, Last sequence update)
05-UUL-2004 (TREMBLrel. 27, Last annotation update)
Putative 6-phosphofructokinase (EC 2.7.1.11).
Name=pfkB; OrderedLocusNames=RPA0379;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q6NCUO RHOPA PRELIMINARY; Q6NCUO;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN=CGA009 / ATCC BAA-98;
PubMed=14704707; DOI=10.1038/nbt923;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rhodopseudomonas palustris.
Bacteria; Proteobacteria; Alphaproteobacteria; Rhizobiales;
Bradyrhizobiaceae; Rhodopseudomonas.
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                                                                                          ELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGL-QHISSGVFL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAGGPTGEAYRRLIBAERIPTLVVPIQGSTRODFTVDETSTGKQFRFVLQGPELKEPEWQ 154
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                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                            37.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                     45.5%;
                                                                                                                                                                                                                                                                                                                                                                                                  ; Pred. No. 3.6e-36; 55; Mismatches 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 648;
Pred. No. 3.
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Walthier K.E., Maddison M., Miller K., Peacock S.J., Cerdeno-Tarraga A.-M.,
Atkins T., Crossman L.C., pitt T., Churcher C., Mungall K.L.,
Atkins T., Crossman L.C., pitt T., Churcher C., Mungall K.L.,
Bentley S.D., Sebalhia M., Thomson N.R., Bason N., Beacham I.R.,
A Brooks K., Brown K.A., Brown N.F., Challis G.L., Cherevach I.,
A Brooks K., Brown K.A., Brown N.F., Challis G.L., Cherevach I.,
A Feltwell T., Fraser A., Hance Z., Hauser H., Holroyd S., Jagels K.,
A Feltwell T., Fraser A., Hance Z., Hauser H., Holroyd S., Jagels K.,
A Keith K.E., Maddison M., Moule S., Price C., Quail M.A.,
A Keith K.E., Maddison M., Moule S., Price C., Quail M.A.,
A Keith K.E., Maddison M., Moule S., Price C., Ouail M.A.,
A Keith K.E., Maddison M., Moule S., Price C., Ouail M.A.,
A Keith K.E., Maddison M., Moule S., Price C., Ouail M.A.,
A Keith K.E., Maddison M., Moule S., Price C., Ouail M.A.,
A Keith K.E., Maddison M., Moule S., Price C., Ouail M.A.,
A Keith K.E., Maddison M., Moule S., Price C., Ouail M.A.,
A Keith K.E., Maddison M., Moule S., Price C., Ouail M.A.,
A Keith K.E., Maddison M., Moule S., Price C., Ouail M.A.,
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A Keith K.E., Maddison M., Moule S., Price C., Ouail M.A.,
A Keith K.E., Maddison M., Moule S., Price C., Ouail M.A.,
A Keith K.E., Maddison M., Moule S., Price C., Ouail M.A.,
A Keith K.E., Maddison M., Moule S., Price C., Ouail M.A.,
B Maller M., Moule S., Price C., Ouail M.A.,
B M., Maller M., Moule S., Price C., Ouail M.A.,
B M., Maller M., Moule S., Price C., Ouail M.A.,
B M., Maller M., Moule S., Price C., Ouail M.A.,
B M., Maller M., Moule S., Price C., Ouail M.A.,
B M., Moule S., Price C., Ouail M.A.,
B M., Maller M., Moule S., Price C., Ouail M.
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Best Local S
Matches 128
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Bacteria; Proteobacteria; Betaproteobacteria; Burkholderiales;
Burkholderiaceae; Burkholderia; pseudomallei group.
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25-OCT-2004 (TrEMBLrel. 28, Last sequence update)
25-OCT-2004 (TrEMBLrel. 28, Last annotation updat
Putative 6-phosphofructokinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Complete proteome; Kinase.
SEQUENCE 313 AA; 31941 MW;
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InterPro; IPR011611; PfkB_region.
Pfam; PF00294; PfkB; 1.
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PROSITE; PS00583; PFKB_KINASES_1; 1.
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                                                       191 FLLKASVRELRECVGSELLTEPEQLAAAHELIDRGRAEVVVVSLGSQGALLATRHASHRF
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                                                                                                                                                                                                               132 LDELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGL-QHISSGV
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                                                                                                                                                                                                                                                                           GGGTGLALRGLLADEGVRAHGIDIAGETRENFSVLETSTGREFRFVLPGPALAAHEWPRC
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YLVKPSLGELRALTGLPLEDDGARLAAARAIVAGGRAQIVALTLGDAGALVVSRDDAVRL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              35.1%; Score 603.5; DB 2; Length 42.2%; Pred. No. 3.9e-33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                59;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
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Best Local (
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PubMed=15377793; DOI=10.1073/pnas.0403306101;
Nierman W.C., DeShazer D., Kim H.S., Tettellni, Nelson K.E.,
Peldblyum T.V., Ulrich R.L., Ronning C.M., Brinkac L.M.,
Daugherty S.C., Davidsen T.D., DeBoy R.T., Dimitrov G., Dodson
Durkin A.S., Gwinn M.L., Haft D.H., Khouri H.M., Kolonay J.F.,
Madupu R., Mchammoud Y., Nelson W.C., Radune D., Romero C.M.,
Sarria S., Selengut J., Shamblin C., Sullivan S.A., White O., Y
Zafar N., Zhou L., Fraser C.M.;
"Structural flexibility in the Burkholderia mallei genome.";
Proc. Natl. Acad. Sci. U.S.A. 101:14246-14251(2004).
EMBL; CP000011; AAU46348.1; -, Genomic_DNA.

TIGR; EMAA0117; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR002173; PfkB.
InterPro; IPR011611; PfkB_region.
InterPro; IPR011611; PfkB_region.
InterPro; IPR02161; PfkB; 1.
Pfam; PF00294; PfkB; 1.
PROSITE; PS00583; PFKB_KINASES_1; 1.
Complete proteome; Kinase; Transferase.
SEQUENCE 313 AA; 31937 MW; 2CE607B49504F9F9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25-OCT-2004 (TrEMBLrel. 28, Created)
25-OCT-2004 (TrEMBLrel. 28, Last sequence update)
25-OCT-2004 (TrEMBLrel. 28, Last annotation updat
6-phosphofructokinase (EC 2.7.1.11).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GO; GO:0003872; F:6-phosphofructokinase activity; IEA GO; GO:0016301; F:kinase activity; IEA. GO; GO:0016740; F:transferase activity; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacteria; Proteobacteria; Betaproteobacteria; Burkholderiales;
Burkholderiaceae; Burkholderia.
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                                                                                                      FLLKASVRELRECVGSELLTEPEQLAAAHELIDRGRAEVVVVSLGSQGALLATRHASHRF
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                                                                                                                                                                                                                                                                                                                GGSTGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYRFVLPGPSLTVAEQEQC
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SSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAAMLLTPGTAACNRDDVE
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41.9%;
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Q89L89

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Best Loc
Matches
                      Q57PV8 SALCH PRELIMINARY; PRT; 2
Q57PV8;
Q57PV8;
10-MAY-2005 (TrEMBLrel. 30, Last sequer
10-MAY-2005 (TrEMBLrel. 30, Last annots
10-MAY-2005 (TrEMBLrel. 30, Last annots
6-phosphofructokinase II.
Name=pfkB; OrderredLocusNames=SC1347;
Salmonella Cholerae-suis (Salmonella er
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Bacteria, Proteobacteria, Alphaproteobacteria,
Bradyrhizobiaceae, Bradyrhizobium.
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PROSITE; PS00584; PFKB_KINASES_2; UNKNOWN_1.

Complete proteome; Kinase.

SEQUENCE 295 AA; 30724 MW; E71C73B9308E3
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DNA Res. 9:189-197(2002).
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Sasamoto S., Watanabe A., Idesawa K., Iriguchi M., Kawashima K.,
Kohara M., Matsumoto M., Shimpo S., Tsuruoka H., Wada T., Yamada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OrderedLocusNames=blr4659;
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GO:0016301; F:kinase activity;
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      Proteobacteria;
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Gammaproteobacteria;
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Last sequence update)
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   DR RELEASE
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Best Local Similarity
                                                                                                                   STRAIN=172;

STRAIN=21534948; PubMed=11677609; DOI=10.1038/35101614;

MCClelland M., Sanderson K.E., Spieth J., Clifton S.W., I

Courtney L., Porwollik S., Ali J., Dante M., Du F., Hou (
Leonard S., Nguyen C., Scott K., Holmes A., Grewal N., M

Ryan E., Sun H., Florea L., Miller W., Stoneking T., Nha
                                                                                                                                                                                                                                                                                                                                                QZPT5_SALTY PRELIMINARY; PRT; 310 AA. QBZPT5; QBZPT5; Q1-MAR-2002 (TrEMBLrel. 20, Created) 01-MAR-2002 (TrEMBLrel. 20, Last sequence update) 01-JUN-2003 (TrEMBLrel. 24, Last annotation update e-phosphofructokinase II (EC 2.7.1.11).
Nature 413:852-856(2001).

EMBL; AE008757; AALZ0251.1; -; Genomic DNA.

GO; GO:0003872; F:6-phosphofructokinase activity;

GO; GO:0016301; F:kinase activity; IEA.

GO; GO:0016740; F:transferase activity; IEA.
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                                                                                               Ryan E., Sun H., Flon
Waterston R., Wilson
"Complete genome sequ
                                                                                                                                                                                                                                                                                                                      Name=pfkB; OrderedLocusNames=STM1326; Salmonella typhimurium.
                                                                                                                                                                                                                                                              NCBI_TaxID=602;
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Enterobacteriaceae; Salmonella.
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RMBL; AE017220; AAX65253.1; -; Genomic_DNA.
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Wang H.-S., Lee Y.-S.;
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InterPro; IPR011611; PfkB-region.
Pfam; PF00294; PfkB; 1.
PROSITE; PS00583; PFKB KINASES 1; 1.
PROSITE; PS00584; PFKB_KINASES 2; 1.
Complete proteome; Kinase; Transferase.
SEQUENCE 310 AA; 32565 MW; 38CC7EB972
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                                                                                                                                                                                         MEDLINE=21534947; PubMed=11677608; DOI=10.1038/35101607; Parkhill J., Dougan G., James K.D., Thomson N.R., Pickard D., Wain Churcher C.M., Mungall K.L., Bentley S.D., Holden M.T.G., Sebaihia Baker S., Basham D., Brooks K., Chillingworth T., Connerton P., Cronin A., Davis P., Davies R.M., Dowd L., White N., Farrar J., Feltwell T., Hamlin N., Haque A., Hien T.T., Holroyd S., Jagels K., Krogh A., Larsen T.S., Leather S., Moule S., O'Gaora P., Parry C., Quail M.A., Rutherford K.M., Simmonds M., Skelton J., Stevens K., Whitehead S., Barrell B.G.; Whitehead S., Barrell B.G.; Whitehead S., Barrell B.G.; Nature 413:848-852(2001).
NUCLEOTIDE SEQUENCE.
STRAIN=TY2 / ATCC 700931;
MEDLINE=22531367; PubMed=12644504;
DOI=10.1128/JB.185.7.2330-2337.2003;
Deng W., Liou S.-R., Plunkett G. III
Burland V., Kodoyianni V., Schwartz
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SEQUENCE
                                                                                                               PubMed=15531882; DOI=10.1038/ng1470;
McClelland M., Sanderson K.E., Clifton S.W., Latreille Porwollik S., Sabo A., Meyer R., Bieri T., Ozersky P., Harkins C.R., Wang C., Nguyen C., Berghoff A., Elliott Kohlberg S., Strong C., Du F., Carter J., Kremizki C., Leonard S., Sun H., Fulton L., Nash W., Miner T., Minx Delehaunty K., Fronick C., Magrini V., Nhan M., Warren
    Delehaunty K., Fronick C., Magrini V., Nhar Spieth J., Wilson R.K.;

"Comparison of genome degradation in Paraty restricted serovars of Salmonella enterica Nat. Genet. 36:1268-1274 (2004).

EMBL; CP000026; AAV77451.1; -; Genomic_DNA.
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01-FEB-2005 (TrEMBLrel.
01-FEB-2005 (TrEMBLrel.
                                                                                                                                                                                                                                                                           STRAIN-ATCC
                                                                                                                                                                                                                                                                                                                                                                   Bacteria; Proteobacteria;
Enterobacteriaceae; Salmor
                                                                                                                                                                                                                                                                                                                                                                                                                                  Name=pfkB; OrderedLocusNames=SPA1518;
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Q5PH98;
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InterPro; IPR011611;
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EMBL; AE016838;
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EMBL; AL627271; CAD02027.1; -; Gen
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                                                                         Gregor J., LL.
Gregor J., LL.
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KGPF2_ECOLI STANDARD; PRT; 309 AA.

P06999; P78065; P78260;

01-APR-1988 (Rel. 07, Created)

13-NOV-1997 (Rel. 35, Last sequence update)

13-SEP-2005 (Rel. 48, Last annotation update)

6-phosphofructokinase isozyme 2 (EC 2.7.1.11)
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InterPro; IPR011611; PfkB region.
Pfam; PF00294; PfkB; 1.
PROSITE; PS00583; PFKB KINASES 1;
PROSITE; PS00584; PFKB KINASES 2;
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SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Name=pfkB; OrderedLocusNames=b1723;
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                                                                                                                  MEDLINE=97426617; PubMed=9278503; DOI=10.1126/science.277.5331.1453; Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V., Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F., Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
                                                                                                                                                                                                                                                                                            phosphofructokinase of 
Gene 28:337-342(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-K12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacteria; Proteobacteria; Gammaproteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Escherichia coli
  NUCLEOTIDE SEQUENCE
                                                                                                                                                                                                                     NUCLEOTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].
                                                                                                                                                                                                                                                                                                                 "Nucleotide sequence of gene pfkB encoding the phosphofructokinase of Escherichia coli K-12.";
                                                                                                                                                                                                                                                                                                                                                                 Daldal F
                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=84262485; PubMed=6235149; DOI=10.1016/0378-1119(84)90151-3;
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GO:0016740; F:transferase activity; IE
GO:0005975; P:carbohydrate metabolism;
                                             complete genome sequence nce 277:1453-1474(1997).
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  [LARGE SCALE
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Aiba H., Baba T., Fujita K., Hayashi K., Inada T., Isono K., Itoh Kasai H., Kashimoto K., Kimura S., Kitakawa M., Kitagawa M., Kasai H., Kashimoto K., Kimura S., Kitakawa M., Komura K., Makino K., Mixi T., Mizobuchi K., Mori H., Mori T., Motomura K., Makade S., Nakamura Y., Nashimoto H., Nishio Y., Oshima T., Saito Sampèi G., Seki Y., Sivasundaram S., Tagami H., Takedd J., Takemoto K., Takeuchi Y., Wada C., Yamamoto Y., Horiuchi T.; Takemoto K., Takeuchi Y., Wada C., Yamamoto Y., Horiuchi T.; "A 570-kb DNA sequence of the Bscherichia coli K-12 genome corresponding to the 28.0-40.1 min region on the linkage map."; DNA Res. 3:363-377(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
EMBL;
EMBL;
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PROSITE; PS00584; PFKB KINASES_2; 1.
Complete proteome; Glycoly818; Kinase; Transferase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This Swiss-Prot entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use as long as its content is in no way modified and this statement is not
                                                                                                                                                                                                                     CONFLICT
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ECO2DBASE; E036.6; 6TH EDII
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Escherichia coli ar
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MEDLINE=83294514; PubMed=6310120;
                                                                                                                                                                                                                                                CONFLICT
                                                                                                                                                                                                                                                                                                               EcoGene; EG10700; pfkB
InterPro; IPR002173; Pi
InterPro; IPR011611; Pi
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                                                                                                                                                                                                                                                                                                       Pram;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          strain is phosphofructokinase-2.

MISCELLANEOUS: This enzyme 1s not to be confused with 6-
phosphofructo-2-kinase which is also called phosphofructokinase
phosphofructocinases enzymes.

MISCELLANEOUS: E.coli has two 6-phosphofructokinases enzymes.

SIMILARITY: Belongs to the carbohydrate kinase pfkB family.
                                                                                                                                                                                                                                                                                                                                                                                                             K02500; AAA24321.1; -; Genomic U00096; AAC74793.1; -; Genomic D90814; BAA15500.1; ALT_INIT; C D90815; BAA15506.1; ALT_INIT; C K00128; AAA24320.1; -; Genomic K00128; AAA24320.1; -; Genomic
63
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                                                                                                                                                                                                                                                                                                     PF00294; PfkB;
                         73
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                                                                                                                       Similarity
                 GSTGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYRFVLPGPSLTVAEQEQCL
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                                                                   RIITLTMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALFPAG
GATGEHLVSLLADENVPVATVEAKDWTRQNLHVHVEASGEQYRFVMPGAALNEDEFRQ-L
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; PfkB_region.
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41.1%;
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                                                                                                                                                            AACKOGIRCIVDSSGEA -> Li
AACKOGIRCIVDSSGEA -> Li
(in Ref. 1).
PV -> AL (in Ref. 1).
SM -> RL (in Ref. 1).
W; A93BEBEOD5801309 CRC
                                                                                                        Score 531.5; DB 1
Pred. No. 3.2e-28;
5; Mismatches 119
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Q83L40 S
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MEDLINE=22590274; PubMed=12704152;
DOI=10.1128/IAI.71.5.2775-2786.2003;
Wei J., Goldberg M.B., Burland V., Venkatesan M.M., Deng W.,
Fournier G., Mayhaw G.F., Plunkett G. III, Rose D.J., Darling
Mau B., Perna N.T., Payne S.M., Runyen-Janecky L.J., Zhou S.,
Schwartz D.C., Blattner F.R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=22772406; PubMed=12384590; DOI=10.1093/nar/gkf566; JIN (0., Yuan Z., Xu J., Wang Y., Shen Y., Lu W., Wang U., Liu F. Yang J., Yang Y., Zhang X., Zhang J., Yang G., Wu H., Qu D., Dc Sun L., Xue Y., Zhao A., Gao Y., Zhu J., Kan B., Ding K., Chen Sun L., Xue Y., Zhao A., Gao Y., Zhu J., Kan B., Ding K., Chen Cheng H., Yao Z., He B., Chen R., Ma D., Qiang B., Wen Y., Hou
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01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
6-phosphofructokinase II.
Name=pfkB; OrderedLocusNames=S1624, SF1507;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Complete genome sequence and comparative flexneri serotype 2a strain 2457T."; Infect. Immun. 71:2775-2786(2003).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Genome sequence of Shigella flexneri 2a: insights into through comparison with genomes of Escherichia coli K12 Nucleic Acids Res. 30:4432-4441(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriaceae; Shigella.
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InterPro; IPR011611; PfkB_region.
Pfam; PF00294; PfkB; 1.
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STRAIN=301 / Serotype
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L; AE016983; AAP16988.1; -; Genomic
GO:0016301; F:kinase activity; IEA.
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                                                                RIITLTMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALFPAG
                                                                                                                                                                                                                                                                                                          proteome; Kinase.
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PS00584; PFKB_KINASES_2; 1.
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                                                                                                                                 Score 530.5; DB 2;
Pred. No. 3.7e-28;
4; Mismatches 120;
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   Query Match
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PIR; E90932; E90932;

GO; GO:0016301; F:kinase a
InterPro; IPR002173; FfkB.
InterPro; IPR011611; FfkB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MUCLEOTIDE SEQUENCE.
STRAIN-0157:H7 / Sakai / RIMD 0509952 / EHEC;
STRAIN-0157:H7 / Sakai / RIMD 0509952 / EHEC;
MEDLINE-21156231; PubMed=11258796;
Hayashi T., Makino K., Ohnishi M., Kurokawa K., Ishii K., Yokoya Han C.-G., Ohtsubo E., Nakayama K., Murata T., Tanaka M., Tobe T ida T., Takami H., Honda T., Sasakawa C., Ogasawara N., Yasunag Kuhara S., Shiba T., Hattori M., Shinagawa H.;
"Complete genome sequence of enterohemorrhagic Escherichia coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome sequence of enterohemorrhagic Escherichia Coli "Complete genome coli "Comple
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22 ECO57
22 ECO57
08XE22 ECO57 PRELIMINARY; PRT; 309 AA.
08XE22; Q7ADG0;
01-MAR-2002 (TYEMBLrel. 20, Created)
01-MAR-2002 (TYEMBLrel. 20, Last sequence update)
13-SEP-2005 (TYEMBLrel. 31, Last annotation update)
13-SEP-2005 (TYEMBLREL. 31, Last annotation update)
6-phosphofructokinase II; suppressor of pfkA (6-phosphofructokinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Perna N.T., Plunkett G. III, Burland V., Mau B., Glasner J.D., Rose D.J., Mayhew G.F., Evans P.S., Gregor J., Kirkpatrick H.A., Posfai G., Hackett J., Kink S., Boutin A., Shao Y., Miller L., Grotbeck E.J., Davis N.W., Lim A., Dimalanta B.T., Potamousis K., Apodaca J., Anantharaman T.S., Lin J., Yen G., Schwartz D.C., Welch R.A., Blattner F.R.;
                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; AE005174; AAG56709.1; -; Genomic_DNA.
EMBL; BA000007; BAB35852.1; -; Genomic_DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   O157:H7 and genomic co
DNA Res. 8:11-22(2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUCLEOTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].
STRAIN=0157:H7 / EDL933 / ATCC 700927 / EHEC;
STRAIN=21074935; PubMed=11206551; DOI=10.1038/35054089;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Name=pfkB; OrderedLocusNames=ECs2429, Escherichia coli O157:H7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=83334;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteria; Proteobacteria; Gammaproteobacteria;
                                                                                                                                                                                                             Pfam; PF00294; PfkB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Genome
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence of enterohaemorrhagic 409:529-533(2001).
                                                                                                                                 PS00583; PFKB_KINASES_1; PS00584; PFKB_KINASES_2;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QKIY 304
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BLVKPNQKELSALVNRE-LTQPDDVRKAAQEIVNSGKAKRVVVSLGPQGALGVDSENCIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FLLKASVRELRECVGSELLTEPEQL-AAAHELIDRGRAEVVVVSLGSQGALLATRHASHR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EEQVLEIESGAILVISGSLPPGVKLEKLTQLISAAQNQGIRCIIDSSGEALSAALAIGNI
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                                                                    32456 MW;
                                                                                                                                                                                                                                  PfkB_region
   30.8%;
                                                                                                                                                                                                                                                                                                              activity;
   Score
                                                                       8986E2D905855533 CRC64;
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   530.5;
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   Length 309;
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Tobe T.,
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| 13 RITTLTMNDALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALFPAG 72 |
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Post-processing: Minimum Match 0%
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Perfect score:
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Issued_Patents_AA:*

1: /cgn2_6/ptodata/1/iaa/5_COMB.pep:*

2: /cgn2_6/ptodata/1/iaa/6_COMB.pep:*

3: /cgn2_6/ptodata/1/iaa/H_COMB.pep:*

4: /cgn2_6/ptodata/1/iaa/RE_COMB.pep:*

5: /cgn2_6/ptodata/1/iaa/RE_COMB.pep:*
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Gapop 10.0 , Gapext 0.5
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1720
1 MTEPAAWDEGKPRITTLTWN.....TEVGQDQYVWHPIVNPEASP 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           March 23, 2006, 05:24:53; Search time 23.1209 Seconds (without alignments) 1212.194 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                  572060 seqs, 82675679 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GenCore version 5.1.7
Copyright (c) 1993 - 2006 Biocceleration Ltd.
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

### SUMMARIES

| Result<br>No. | Score | Query<br>Match | Query<br>Match Length | BG | ID  | Description |
|---------------|-------|----------------|-----------------------|----|---|-------------|
| 2 1           | 726   | 42.2           | 315                   | 22 | US-09-902-540-14286<br>US-09-489-039A-10377 |             |
| (L)           | 322   | 18.7           | 318                   | N  |   |             |
| 4.            | 298   | 17.3           | 321                   | N  | -09-  |             |
| ហ             | 284   | 16.5           | 312                   | N  | -09-134-                                    |             |
| თ             | 279   | 16.2           | 330                   | N  | -09-715-                                    |             |
| 7             | 279   | 16.2           | 330                   | N  | -10   |             |
| 89            | 276.5 | 16.1           | 326                   | N  | US-09-134-000C-5607                         |             |
| 9             | 273.5 | 15.9           | 334                   | N  | -09-107-                                    |             |
| 10            | 264.5 | 15.4           | 314                   | N  | US-09-134-001C-3252                         |             |
| 11            | 260   | 15.1           | 310                   | N  | US-09-107-433-4601                          |             |
| 12            | 240   | 14.0           | 303                   | Н  | US-08-961-539-2                             |             |
| 13            | 240   | 14.0           | 303                   | N  | US-09-185-826-2                             |             |
| 14            | 230   | 13.4           | 303                   | N  | US-09-583-110-5072                          |             |
| 15            | 230   | 13.4           | 311                   | N  | US-09-107-433-4423                          |             |
| 16            | 227   |                | 236                   | N  | US-09-107-532A-4009                         |             |
| 17            | 221.5 | 12.9           | 312                   | N  | US-09-489-039A-8270                         |             |
| 18            | 221   | 12.8           | 316                   | N  | US-09-543-681A-7124                         |             |
| 19            | 203   | 11.8           | 272                   | N  | US-09-583-110-3866                          |             |
| 20            | 191.5 | 11.1           | 324                   | N  | US-09-328-352-7458                          |             |
| 21            | 170.5 | 9.9            | 321                   | N  | US-09-107-532A-5008                         |             |
| 22            | 160.5 | 9.3            | 259                   | N  | US-09-252-991A-16738                        |             |
| 23            | 146   | •              | 529                   | N  | US-09-134-000C-4524                         |             |
| 24            | 139.5 | 8.1            | 503                   | N  | US-09-252-991A-31882                        |             |
| 25            | 132   | ٠              | 313                   | N  | US-09-489-039A-12895                        |             |
| 26            | 132   | 7.7            | 498                   | N  | US-09-477-962-114                           |             |
| 2             | 126.5 |                |                       |    |   |             |

| 4.                   | 4.              | 4.               | 4.                  | 4.                | 4.                 | <u>.</u><br>س       | 38                  | ω                   | سا                  | ıμ              | ψ               | μ                    | μ                  | μ                    | <u>س</u>            | 2               | 2                  |
|----------------------|-----------------|------------------|---------------------|-------------------|--------------------|---------------------|---------------------|---------------------|---------------------|-----------------|-----------------|----------------------|--------------------|----------------------|---------------------|-----------------|--------------------|
|                      |                 |                  |                     |                   |                    |                     | 3 112.5             |                     |                     | 5 116.5         |                 |                      |                    |                      |                     | 9 124           |                    |
| 6.1                  | 6.1             | 6.1              | 6.2                 | 6.2               | 6.4                | 6.5                 | 6.5                 | 6.6                 | 6.8                 | 6.8             | 6.8             | 7.0                  | 7.0                | 7.1                  | 7.1                 | 7.2             | 7.3                |
| 379                  | 328             | 3413             | 342                 | 613               | 477                | 1912                | 331                 | 135                 | 491                 | 160             | 160             | 526                  | 302                | 330                  | 315                 | 347             | 278                |
| N                    | N               | N                | N                   | N                 | N                  | N                   | N                   | N                   | N                   | N               | μ.              | N                    | N                  | N                    | N                   | N               | N                  |
| US-09-252-991A-30159 | US-08-826-611-6 | US-10-042-665A-8 | US-09-489-039A-9668 | US-09-758-759-151 | US-09-492-709A-325 | US-09-949-016-10490 | US-09-902-540-10221 | US-09-107-532A-4447 | US-09-543-681A-6634 | US-09-185-826-4 | US-08-961-539-4 | US-09-252-991A-32984 | US-09-710-279-3062 | US-09-489-039A-14043 | US-09-134-001C-4521 | US-08-826-611-2 | US-09-902-540-9876 |
| Sequence             | Sequence        | Sequence         | Sequence            | Sequence          | Sequence           | Sequence            | Sequence            | Sequence            | Sequence            | Sequence        | Sequence        | Sequence             | Sequence           | Sequence             | Sequence            | Sequence        | Sequence           |
| 30159, A             | 6, Appli        | 8, Appli         | 9668, Ap            | 151, App          | 325, App           | 10490, A            | 10221, A            | 4447, Ap            | 6634, Ap            | 4, Appli        | 4, Appli        | 32984, A             | 3062, Ap           | 14043, A             | 4521, Ap            | 2, Appli        | 9876, Ap           |

# ALIGNMENTS

| В          | 8          | 문  | Ś  | 뭣  | Ś  | B  | Ś  | В  | ફ   | B  | Ś  | 3 M O  | US-09-<br>Pates<br>Pates<br>GENES<br>APP<br>APP<br>APP<br>APP<br>APP<br>APP<br>APP<br>APP<br>APP<br>AP   |
|------------|------------|--|--|--|--|--|--|--|---|--|--|--|--|
|            |            |  |  |  |  |  |  |  |   |  |  | Query Match<br>Best Local<br>Matches 15        | RESULT 1  US-09-902-540-14286  JE SEQUENCE 14286, A  JE PALENT NO. 683344  GENERAL INFORMATI  APPLICANT: GOLDE  APPLICANT: HIRE  APPLICANT: Wieg  TITLE OF INVESTI  FILE REFERENCE:  CURRENT APPLICATI  CURRENT FILING  CURRENT FILING DAT  CURMER FILING DAT  NUMBER OF SEQ ID  SEQ ID NO 14286  LENGTH: BT  TYPE: PRT  ORGANISN: Myxoc  US-09-902-540-14286  |
|            |            |  |  |  |  |  |  |  |   |  |  | Loca   | TI 1 9-902-540 quence 14 tent No. NERAL INF PPLICANT: PPLICANT: PPLICANT: ITLE OF II ILE REFER URRENT FI RIOR APPL RIOR APPL RIOR APPL RIOR OF Q ID NO 1 TYPE: PRI ORGANISM: 9-902-540   |
| 302        | 311        | 242  | 251  | 182  | 191  | 122  | 132  | 62   | 72  | N  | 12   | tch<br>al Si<br>152;                           | -540-14 -6 14286 NO. 688 NO. 688 NO. 688 NO. 688 NO. 688 NO. 1 INFORM ANT: F APPLICA F F ILIN F I I I I I I I I I I I I I I I I I I   |
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| RLFTQVKAEP | RFF-ELAAEP | PVRI   | PMTA   | KPNR   | KASV   | LEDV   | -RGA   | resc   | IGSI  | ATL  | - 1111   | / Match<br>Local Similarity<br>nes 152; Conser | SULT 1 109-902-540-14286 Sequence 14286, Applics Patent No. 683347 GENERAL INFORMATION: APPLICANT: Glidman, B. APPLICANT: Hinkle, G: APPLICANT: Wiegand, I TITLE OF INVENTION: M; FILE REFERENCE: 38-10 CURRENT FILING DATE: 200 NUMBER OF SEQ ID NOM: PRIOR APPLICATION NUM PRIOR PILING DATE: 200 NUMBER OF SEQ ID NOS: SEQ ID NO 14286 LENGTH: 315 TYPE: PRT ORGANISM: MYXOCOCCUS -09-902-540-14286   |
| AEP        | -ÆP        | SSY  | VSG  | REL  | REL.   | AVG  | -AAS   | )LBB)  | -LMA  | L NP   | · MN   | ërv  | Lica Barrier B |
| 311        | 319        | ζΩ<br>AGE  | /GAG   | STOP   | RECV   | IAL  | - 54<br>- 74<br>- 7  | LLEE   | LLGD  | Vail   | . E  | 42.<br>larity 49.<br>Conservative              | 1940-14286  19 14286, Application UN  19 14286, Application UN  19 14286, Application UN  19 14286  19 14286  19 14286  19 14286  19 14286  19 14286  19 14286  19 14286   |
|            |            | DSF\   | DAM  | GAS  | GSEI   | VASC   | VASC   | KGL.   | AGVI  | ATS  | TTS  | 42.2%;<br>49.0%;<br>ive                        |  |
|            |            | AGM:   | 'AAI'  | EDF.   | TTE  | SLA  | SLP  | RRS  | FRV   | /PEV   | ₩<br>2-  | 56   | 5/099025<br>J.<br>18 xanth<br>18 xanth<br>19/09/90<br>7217,883   |
|            |            | ILEAL<br>  | IVGL   | ATQA   | -PEQI  | PGVP   | PGVA   | APTC.  | IPIA  | TPEH   | RPTE   | 2 2  | 9902540<br>9902540<br>xanthus<br>09/902,<br>0  |
|            |            | ARG  | SRG  | AA-  | - §<br>- §   | EDF  | -ADY   | DATI   | ASTI  | E.   |  | No.<br>smatc                                   | 40<br>us (<br>2,54   |
|            |            | JSTE<br> -   | ITS  | RELVI  | -E1  | ARV  | KQRV   | RESF   | RESF  | CGPV   | CGAP   | ore 726; Did. No. 7e-<br>Mismatches            | Genome   |
|            |            | DALF   | KSVF   | AQGH   | DRGF   | ARLO   | - ADIC   | TVAE   | -NAT  | RRDE   | RYDE   | <u>δ</u> 🛭                                     |  |
|            |            | WGI/   | LGN  | AEVI   | -EAEV  | Ä.   | :RRS   | GTQ  | SRT   | Ğ-   | – ဂို<br>– ဂို   | 00,  | eque   |
|            |            | ASGT   | AAGA   | LAVS   | SVVS   | AVRV   | STPL   | AREY   | - ROY   | ANIE   | ANIE   | Length 315;<br>Indels                          | Sequences  |
|            |            | AALI   | AMILI  | SMGAL  | . I .  | בעעעץ<br>בעעעץ   | ILD]   | RFII   | RFVI  | AR V   | ARI\   | ngth 3<br>Indels                               | s and  |
|            |            | )<br> <br> <br> <br>   | TPG.   | Ğ.   | -ĞA  | INGP   | GG   | Pep.   | PGP   | /REL   | -<br>TAH   | 115;   |  |
|            |            | LDTC   | TAAC   | VITR   | · ATR  | PLRA   | -QI  | PTLSE  | . I .   | GGEA   | GGCS   | 2;   | Uses   |
|            |            | TPPPVRTYSSVGAGDSFVAGMTLALARGQSTBDALRWGIASGTAALLIQGTDLCYRADVE | ssipmtavsgygagdamyaaitvglsrgwsliksvrlgnaagaamlltpgtaacnrddve | FMAKPNRRELRDLSGASVEDFATQAAAARELVAQGRAEVLAVSMGADGALVTTRTAQFRA | FLLKASVRELRECVGSELLTEPEQLAAAHELIDRGRAEVVVVSLGSQGALLATRHASHRF | LDALEDVAVGATYIVASGSLAPGVPEDFYARVARLGKRLAVRVVVDTNGPPLRAALEEGV | LDELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGLQ-HISSGV | GGATGSQLEELLEEKGLLRRSVPLQDATRESFTVAEGTGAREYRFILFGFTLSEREWQRC | GGSTGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYRFVLPGPSLTVAEQEQC                                | PHIVTLTLNPTIDVATSVPEVTPEHKLRCGPVRRDPGGGGINVARVVRELGGEAIAVYTR | PRIITLTMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALFPA | Gaps   | Thereof  |
|            |            |  |  |  |  |  |  |  |   |  |  | ß  | eof  |
|            |            | 301  | 310  | 241  | 250  | 181  | 190  | 121  | 131   | 61   | 71   | 2;   |  |
|            |            |  |  |  |  |  |  |  |   |  |  |  |  |

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RESULT 3
US-09-134-000C-6381
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US-09-489-039A-10377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION NUMBER: US/09/489,039A CURRENT FILING DATE: 2000-01-27 PRIOR APPLICATION NUMBER: US 60/117,747 PRIOR FILING DATE: 1999-01-29 NUMBER OF SEQ ID NOS: 14342 SEQ ID NO 10377 LENGTH: 314
                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: LYNN DOUCETTE-Stamm et al
APPLICANT: LYNN DOUCETTE-Stamm et al
TITLE OF INVENTION: MUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO
TITLE OF INVENTION: ENTEROCOCCUS FAECALIS FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 032796-032
CURRENT PELLICATION NUMBER: US/09/134,000C
CURRENT FILING DATE: 1990-08-13
PRIOR APPLICATION NUMBER: US 60/055,778
PRIOR APPLICATION NUMBER: US 60/055,778
PRIOR FILING DATE: 1997-08-15
NUMBER OF SEQ ID NOS: 6812
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Matches
                                                                                                                                             SOFTWARE: PatentIn SEQ ID NO 6381
                                                                                                                                                                                                                                                                                                                                                                                            Sequence 6381, Application US/09134000C Patent No. 6617156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 10377, Appl Patent No. 6610836 GENERAL INFORMATION:
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: PRT
ORGANISM: Klebsiella
-09-489-039A-10377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Gary Breton et. al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA
TITLE OF INVENTION: PNEUMONIAE FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 2709.2004001
                                                                                                     TYPE: PRT
                                                                                 ORGANISM: Enterococcus
                                                                                                                        LENGTH:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SSGVFLLKASVRELRECVGSELLTEPEQLAAAHELIDRGKAEVVVVSLGSQGALLATRHA 246
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18.7%;
29.6%;
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                                                                                   faecalis
Score 322; DB 2; Pred. No. 1.9e-24;
                     Length 318;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Lynn Doucette-Stamm et al TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACITILE OF INVENTION: ENTEROCOCCUS FAECALIS FO FILE REFERENCE: 032796-032 CURRENT APPLICATION NUMBER: US/09/134,000C CURRENT FILING DATE: 1998-08-13 PRIOR APPLICATION NUMBER: US 60/055,778 PRIOR APPLICATION NUMBER: US 60/055,778 PRIOR FILING DATE: 1997-08-15
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SOFTWARE: PatentIn version
SEQ ID NO 3807
LENGTH: 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 3807, Application Patent No. 6617156 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                            Query Match
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                                 246 ASHRESSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAAMLLTPGTAA 303
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GVYRSNVLKRPLKNSVGAGDSMIAGFIGNFSKTQDPLEAFKWGVACGSATAFSDDLAS 303
                                                                                                    ISSGVFILKASVRELRECVGSELLTEPEQLAAAHELIDRGRAEVVVVSLGSQGALLATRH 245
                                                                                                                                                                                                                                                                                                           GKPRIITLTMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALF
                                                                                                                                           --IQELKQAVSRVQAGDIVVLSGSTPASLRKGFYEELIQIVKEKGAEFVIDTTGEDLMNA 186
                                                                                                                                                                              QCLDELRGAAA----SAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGLQH- 185
                                                                                                                                                                                                                 FLGGFTGSFIADWLKKEEIQTNFTPVSADTRINIKL-KSDTETEINGL--GPALTNEE--
                                                                                                                                                                                                                                                     PAGGSTGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYRFVLPGPSLTVAEQE 129
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILKASVRELRECVGSELLTEPEQLAAAHELIDR----GRAEVVVVSLGSQGALLATRHAS
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Pred. No. 5.6e-22;
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US-09-134-001C-5583

Sequence 5583, Application US/09134001C Patent No. 6380370

GENERAL INFORMATION: APPLICANT: Lynn Dou

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APPLICANT: Lynn Doucette-Stamm et al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO STAP
TITLE OF INVENTION: EPIDERMIDIS FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: GTC-007
CURRENT APPLICATION NUMBER: US/09/134,001C
CURRENT FILING DATE: 1998-08-13
FRIOR APPLICATION NUMBER: US 60/064,964
PRIOR FILING DATE: 1997-11-08
PRIOR FILING DATE: 1997-11-08
PRIOR APPLICATION NUMBER: US 60/055,779
PRIOR FILING DATE: 1997-08-14
NUMBER OF SEQ ID NOS: 5674
SEQ ID NO 5583
LENGTH: 312
TYPE: PRT
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US-09-715-040-2
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US-09-134-001C-5583
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Best Local Similarity 26.8%;
Matches 80; Conservative 6
                                                                                                                                                                                  Matches
                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                           TYPE: PRT
ORGANISM: Corynebacterium glutamicum
-09-715-040-2
                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Mockel, Bettina
APPLICANT: Pfefferle, Walter
TITLE OP INVENTION: NEW NUCLEOTIDE SEQUENCES WHICH
FILE REFERENCE: 21123/275321
CURRENT APPLICATION NUMBER: US/09/715,040
CURRENT FILING DATE: 2001-06-04
                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQ ID NOS: 4
SOFTWARE: PatentIn vers
                                                                                                                                                                                                                                                                                                                                               LENGTH: 330
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                                                                                                                                  IITLTMNPALDITTSVDVVRPTEKMRCGAPRYD----PGGGGINVARIVHVLGGCSTAL 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NPQGHVVNTVGSGDSTVAGMVAGLSMGLNIDEAFQQAVASGTATAFSEDLA--TRDAIE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FIKPNKDELEVMFNTTVKSDEDVIKYGKEILKKG-AQSVIISLGGDGAIYVDQHQSIKAV 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SQIR-RTTNDDIVIVAGSVPNSIPSDAYAQIAQITEKTGAQLVVDAEKDLVETVLPYRPL 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGLQHI-SSGVF 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FPGDFIAQTLEDSNIQSDFVQVDEDTR----INVKLKSGQETEINAPGPKVTHAQFEQLL 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STGSLLMALLGDAGVPFRVIPIAASTRESFTVN-ESRTAKQYRFVLPGPSLTVAEQEQCL 132
                                           FPAGGSTGSLLMALLGDAGVPFRVIPIAASTRESFTVNE--SRTAKQYRFVLPGPSLTVA 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IYTVTFNPSIDYIIFTDGFEISGLNRAKATYKFAGGKGINVSRVLKTLDVDSTALGFSGG
FPAGKL---DPFVPLVRDIGLPVETVVINKNVRTNTTVTEPDGTTTK----
                                                                                      IITFTPNPSIDSTLSLG----EELSRGSVQRLDSVTAVAGGKGINVAHAVLLAGFETLAV
                                                                                                                                                                                  Conservative
                                                                                                                                                                                                   16.2%; Score 279; DB 2;
31.2%; Pred. No. 5.2e-20;
                                                                                                                                                                               46; Mismatches
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RESULT 8 US-09-134-000C-5607

Sequence 5607, Application US/09134000C Patent No. 6617156 GENERAL INFORMATION:

APPLICANT: Lynn Doucette-Stamm et al TITLE OF INVENTION: NUCLEIC ACID AND AMINO TITLE OF INVENTION: ENTEROCOCCUS FABCALIS

ACID SEQUENCES RELATING FOR DIAGNOSTICS AND THER

THERAPEUTICS

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TYPE: PRT
; ORGANISM: Corynebacterium glutamicum
US-10-098-626-4
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Best Local Similarity
Matches 102; Conserv
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APPLICANT: FARWICK, Mike, et al.
APPLICANT: FARWICK, Mike, et al.
TITLE OF INVENTION: PROCESS FOR THE PREPARATION OF L-AMINO ACIDS BY USING CORYNEFORM
FILE REFERENCE: 032301 MN 269
CURRENT APPLICATION NUMBER: US/10/098,626
CURRENT FILING DATE: 2002-03-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS: 6
SOFTWARE: PatentIn version 3.1
SEQ ID NO 4
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ESTINAVSYGSTAASIPGTTIPRPDQL
                                  KSVRLGNAAGAAMLLTPGTAACNRDDV 309
                                                                                                                                                                                                                       EQKLRSLEKVLIDALR---PEVTWVVLAGSLPPGAPVDWYARLTALIHSARPDVRVAVDT
                                                                                                                                                                                                                                                                                             FPAGKL--DPFVPLVRDIGLPVETVVINKNVRTNTTVTEPDGTTTK----LNGPGAPLS
                                                                                                                                                                                                                                                                                                                                FPAGGSTGSLLMALLGDAGVPFRVIPIAASTRESFTVNE--SRTAKQYRFVLPGPSLTVA 126
                                                                                                                                                                                                                                                                                                                                                                      IITFTPNPSIDSTLSLG----BELSRGSVQRLDSVTAVAGGKGINVAHAVLLAGFETLAV
                                                                                                                                                                                                                                                                                                                                                                                                      IITLTMNPALDITTSVDVVRPTEKMRCGAPRYD----PGGGGINVARIVHVLGGCSTAL
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                                                                        NRG-IEQVLVTLGAAGAVLVNAEGAWTATSPKIDVVSTVGAGDCALAGFVMARSOKKTLE
                                                                                                                                              SDKPLMALGESLDTPGAAPNLIKPNGLELGQLANTDGEELEARAAQGDYDAIIAAADVLV
                                                                                                                                                                                                                                                       EQ-----EQCLDELRGAAASAAFVVASGSLPPGVAADYYQRVADICR---RSSTPLILDT
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                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                   GGGLQHISSGVFLLKASVRELRECV---GSELLTEPEQ-----LAAAHELI
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; Pred. No. 5.2e-20;
46; Mismatches 133
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RESULT 9
US-09-107-532A-6336
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: PatentIn version 3.1
SEQ ID NO 5607
LENGTH: 326
TYPE: PRT
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PRIOR FILING DATE: 1997-08-15
NUMBER OF SEQ ID NOS: 6812
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CURRENT APPLICATION NUMBER: US/09/134,000C
CURRENT FILING DATE: 1998-08-13
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                                                                                        SOFTWARE: ASCII

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/107,532A

FILING DATE: 30-Jun-1998

PRIOR APPLICATION DATA:

APPLICATION UNMBER: 60/085,598

FILING DATE: 14 May 1998

APPLICATION NUMBER: 60/051571

FILING DATE: July 2, 1997

ATTORNEY/ACENT INFORMATION:
NAME: Ariniello, Pamela Deneke
REGISTRATION NUMBER: 40,489
REFERENCE/DOCKET NUMBER: GTC-012
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: CD/ROM ISO9660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 7310
CORRESPONDENCE ADDRESS:
ADDRESSEE: GENOME THERAPEUTICS CORPORATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Lynn A Doucette-Stamm TITLE OF INVENTION: NUCLEIC ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  250 FSSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAAMLLTPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 197 PFLLKPNEEELQEWFHTEVQTKDDYIFYGQELLKRG-AKNILLSLGSEGALFMNNEKVLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           190 VFLLKASVRBLRECVGSELLTEPEQLAAAHBLIDRGRAEVVVVSLGSQGALLATRHASHR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          141 KISELR----KGDYLCVSGSLPQGVSPSILIEISRICFEKQVFLILDSSYEEILDCLPYQ 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         133 --DELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGG-LQHISSG 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 87;
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                                                                                                                                                                                                                                                                                                                                      OPERATING SYSTEM: <Unknown>
                                                                                                                                                                                                                                                                                                                                                               COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                    ZIP: 02354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STATE: Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CITY: Waltham
                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY: USA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ENTEROCOCCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and David Bush
AND AMINO ACID SEQUENCES RELATING TO
FAECIUM FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 326;
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US-09-134-001C-3252
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                                                                                                                                             Best Loc
Matches
                                                                                                                                                                                                                                                                                     PRIOR FILING DATE: 1997-08-14
NUMBER OF SEQ ID NOS: 5674
SEQ ID NO 3252
LENGTH: 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 3252, Ap
Patent No. 638037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                  FILE REFERENCE: GTC-007
CURRENT APPLICATION NUMBER: US/09/134,001C
CURRENT FILING DATE: 1998-08-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Lynn Doucette-Stamm et al TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO STAPHYLOCOCCUS TITLE OF INVENTION: EPIDERMIDIS FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION NUMBER: US 60/064,964 PRIOR FILING DATE: 1997-11-08 PRIOR APPLICATION NUMBER: US 60/055,779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: (781)893-8277
INFORMATION FOR SEQ ID NO: 6336:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                      TYPE: PRT
                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE: protein HYPOTHETICAL: YES ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
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72 GGSTGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYRFVLPGPSLTVAEQEQC 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 81 FTGKYIEDYLQKKQIQTEFIEVPGMTRINVFTQVNQTREEYKLVNQGPEIPQAAVHNFLN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14 IITLTMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALFPAGG
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                                                             4 PMILTLTLNPSVDISYPLDQFNLDTVNRVSQTSKTAGGKGLNVTRVLSEFGEDVIASGFL 63
                                                                                                                                               , 08
                                                                                                                                                                  Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FSSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAA 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PFLLKPNEEELSSWFGRKMVTDEDYFVYGQRLVESG-AENVLLSLGEKGAILFTKDRVIR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -FLLKASVRELRECVGSELLTEPEQLAAAHELIDRGRAEVVVVSLGSQGALLATRHASHR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Enterococcus faecium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: amino acid
TOPOLOGY: linear
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)370
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                                                                                                                                               Conservative
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                                                                                                                                           15.4%; Score 264.5; DB 2; 26.1%; Pred. No. 1.5e-18; Live 55; Mismatches 166;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              56; Mismatches 139;
                                                                                                                                                                                   DB 2;
                                                                                                                                                                                     Length 314;
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NAME/KEY: misc_feature;
;
LOCATION: (B) LOCATION 1...310
;
SEQUENCE DESCRIPTION: SEQ ID NO: 4601:
US-09-107-433-4601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 11
US-09-107-433-4601
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Patent No. 6607744

GENERAL INFORMATION:

APPLICANT: Lynn A Doucette-Stamm and David Bush

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID

SEQUENCES RELATING TO STREPTOCCCCUS PNEUMONIAE

THERAPEUTICS
  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO: 4601:
                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US/09/107,433
FILING DATE: 30-Jun-1998
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 60/ 085131
FILING DATE: May 12, 1998
APPLICATION NUMBER: 60/051553
FILING DATE: July 2, 1997
ATTORNEY/AGENT INFORMATION:
NAME: Ariniello, Pamela Deneke
REGISTRATION NUMBER: 40,489
REFERENCE/DOCKET NUMBER: GTC-011
TELECOMMUNICATION INFORMATION:
TELEPHONE: (781)893-5007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: <Unknown>
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM: MEDIUM TYPE: CD/RO
                                                                                                                                                                        MOLECULE TYPE: protein HYPOTHETICAL: YES ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES:
                                                                                                                                      FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 302
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             249 RFSSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAAMLLTPGTAACNRDD 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            64
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KVNIPNIKVVNPVGSGDSTVAGIASGLIHQQTDEELLKKANAFGMLNAMEQQTGHINTDK 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KPTVIKPNIDELSQLLNYKVTNDIKELKAAVSQPIFNDIEWIIVSLGSEGAFAKHNQKFY 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KSHLLKLFKETDVAVMSGSLPKGLNTDYYADIVRLAKEQGILTILDSSGQSLEEVLISNV 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LDELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGLQHI-SSGV 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGALGQYIEEQIETTRIKQAFFKIKGETRNCIAI--LHEGQQTEILEKGPTIELKESEEF 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CITY: Waltham
STATE: Massachusetts
                                                                                                                                                                                                                                                    TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: <Unknown>
                                                                                                                                                      ORGANISM: Streptococcus pneumoniae
                                                                                                                                                                                                                                  TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                 TELEFAX: (781)893-8277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OPERATING SYSTEM: <Unknown>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            02354
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  15.1%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5206
  Score 260; DB 2;
Pred. No. 4.2e-18;
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                      Length 310;
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Patent No. 5861281
GENERAL INFORMATION:
APPLICANT: Zalacain, Magdalena
APPLICANT: Brown, James R.
TITLE OF INVENTION: No. 5861281
                                                            Matches
                                                                                              Query Match
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                                                                                                                                                                                                                                                        INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS
LENGTH: 303 amino acio
                                                                                                                                                                                                                                                                                                          REGISTRATION NUMBER: 28,354
REFERENCE/DOCKET NUMBER: GMI
TELECOMMUNICATION INFORMATION:
TELEPHONE: 215/994-2252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: FASTSEQ for Windows Version CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
                                                                              y Match 14.0%; Score 240; DB 1; Local Similarity 27.4%; Pred. No. 4.5e-16;
                                                                                                                                                  STRANDEDNESS: 811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                       NAME: Dickinson, Q. Todd
REGISTRATION NUMBER: 28,
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                                                                                                                                                                                                                                                                                            TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER:
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                                                                                                                                                                                                              303 amino acids
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                                                            54; Mismatches 141;
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                                                                                              Length 303;
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US-09-185-826-2
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Patent No. 6171840
GENERAL INFORMATION:
                                                                                                                           Matches
                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                     INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 19103-2793
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compati
OPERATING SYSTEM: DOS
                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: 28,354
REFERENCE/DOCKET NUMBER: GM:
TELECOMMUNICATION INFORMATION:
TELEPHONE: 215/994-2252
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APPLICATION NUMBER: US/09/107
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APPLICANT: Brown, James R.
TITLE OF INVENTION: No. 6171840el
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ATTORNEY/AGENT INFORMATION:
NAME: Dickinson, Q. Todd
REGISTRATION NUMBER: 28,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
PRIOR APPLICATION DATA:
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                                                                                                                                                                                                                                TYPE: amino acid
STRANDEDNESS: sir
                                                                                                                                           Local
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74 STGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYRFVLPGPSLTVAEQEQCLD
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                                                                                      14 IITLTMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALFPAGG
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                                                 IYTVTLNPSIDYIVRLDQVKVGSVNRMDSDDKFAGGKGINVSRVLKRLNISNTATGFIGG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PLLVKPNNHELGAIFGVKLESLDEIEKYARELLAKG-AQNVIISMAGDGALLVTSEGAYF 233
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                                                                                                                                                                                                                                                                                                                                         215/994-2222
                                                                                                                       14.0%; Score 240; DB 2; Length 303; llarity 27.4%; Pred. No. 4.5e-16; Conservative 54; Mismatches 141; Indels
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FILE REFERENCE: PATHOO-OTA
CURRENT APPLICATION NUMBER: US/09/583,110
CURRENT FILING DATE: 2000-05-26
CURRENT FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: US 09/107,433
PRIOR FILING DATE: 1998-06-30
PRIOR APPLICATION NUMBER: US 60/085,131
PRIOR FILING DATE: 1998-05-12
PRIOR APPLICATION NUMBER: US 60/051,553
PRIOR FILING DATE: 1997-07-02
NUMBER OF SEQ ID NOS: 5322
SUMMER OF SEQ ID NOS: 5322
RESULT 15
US-09-107-433-4423
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US-09-583-110-5072
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Best Local :
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GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Lynn Doucette-Stamm et al.
TITLE OF INVENTION: Nucleic Acid and Amino Acid Sequences Relating to Streptococcus
TITLE OF INVENTION: Pneumoniae for Diagnostics and Therapeutics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: PRT
ORGANISM: Streptococcus
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCATION: (17)
OTHER INFORMATION: Identity of amino acid sequences at the above locations are unknown
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77; Conserv
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                                                                                            AKPIKGTVKNSVGÅGDSMVÅGFTGEFVKSKDAVEAFKWGVÅCGTÄ
                                                                                                                                                                                  PLIVKPNNHEIGAIFGVKLESLDEIEKYARELLAKG-AQNVIISMAGDGALLVTSEGAYF
                                                                                                                                                                                                                                                                          ELKAILSSLTAEDTVVFAGSSAKNLGNVIYKDLISLTRQTGAQVVCDFEGQTLIDSLDYQ 174
                                                                                                                                                                                                                                                                                                                                                             FTGKFITDTLAEEEIETRFVQVAEDTRINVKIKADQETE----INGTGPTVEPVK--LE
                                                                                                                                                                                                                                                                                                                                                                                                                                                     IYTVTLNPSIDYIVRXDQVKVGSVNRMDSDDKFAGEKGINVSRVLKRLNISNTATGFIGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PLLVKPNNHELGAIFGVKLESLDEIEKYÄRELLAKG-ÄQNVIISMAGDGÄLLVTSEGAYF 233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VFLLKASVRELRECVGSELLTEPEQLAAAHELIDRGRAEVVVVSLGSQGALLATRHASHR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ELRGAAASAA---FVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGL-QHISSG 189
                                                                                                                                      FSSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FSSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ELKAILSSLTAEDTVVFAGSSAKNLGNVIYKDLISLTRQTGAQVVCDFEGQTLIDSLDYQ 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FTGKFITDTLAEEEIETRFVQVAEDTRINVKIKADQETE----INGTGPTVEPVK--LE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13.4%; SCUL.
27.0%; Pred. No. 4.06 _...
rive 53; Mismatches 143;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 303;
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                                                                                              278
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Sequence 4423, Application US/09107433 Patent No. 6800744 GENERAL INFORMATION:

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NAME/KEY: misc feature
LOCATION: (B) LOCATION 1...311
SEQUENCE DESCRIPTION: SEQ ID NO: 4423:
US-09-107-433-4423
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Best Local S
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: (781)893-8277
INFORMATION FOR SEQ ID NO: 4423:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/107,433
PILING DATA:

PRIOR APPLICATION DATA:

APPLICATION DATA:

APPLICATION NUMBER: 60/05131
APPLICATION NUMBER: 60/05153
APPLICATION NUMBER: 60/051553
FILING DATE: May 12, 1998
APPLICATION NUMBER: 60/051553
FILING DATE: July 2, 1997
ATTORNEY/AGENT INFORMATION:

NAME: Ariniello, Pamela Deneke
REGISTRATION NUMBER: 40,489
REFERENUMCHOME: (781)893-5007
TELEPRAY. (781)893-5007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     y Match 13.4%; Score 230; DB 2; Length 311; Local Similarity 27.0%; Pred. No. 5e-15; hes 77; Conservative 53; Mismatches 143; Indels 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 311 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: YES
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZIP: 02354
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
ADDRESSEE: GENOME THERAPEUTICS CORPORATION
STREET: 100 Beaver Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Lynn A Doucette-Stamm and David Bush
TITLE OF INVENTION: NUCLEIC ACID AMINO ACID
SEQUENCES RELATING TO STREPTOCOCCUS PNEUMONIAE
THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES: 5206
242 AKPÍKGTVKNSVGÁGDSMVÁGFTGEFVKSKDAVEAFKWGVÁCGTÁ 286
                                                                                                                                    190 VFLLKASVRELRECVGSELLTEPEQLAAAHELIDRGRAEVVVVSLGSQGALLATRHASHR 249
                                                                                                                                                                                                       123 ELKAILSSLTAEDTVVFAGSSAKNLGNVIYKDLISLTROTGAQVVCDFEGQTLIDSLDYQ 182
                                                   250 FSSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAA 294
                                                                                                      183 PLLVKPNNHELGAIFGVKLESLDEIEKYARELLAKG-AONVIISMAGDGALLVTSEGAYF 241
                                                                                                                                                                                                                                                          134 ELRGAAASAA---FVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGL-QHISSG 189
                                                                                                                                                                                                                                                                                                              70 FTGKFITDTLAEEEIETRFVQVAEDTRINVKIKADQETE----INGTGPTVEPVK--LE 122
                                                                                                                                                                                                                                                                                                                                                                                                                  10 İYTVTLNPSIDYIVRXDQVKVGSVNRMDSDDKFAĞEKĞİNVSRVLKRLNISNTATGFIĞĞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14 IITLIMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALFPAGG 73
                                                                                                                                                                                                                                                                                                                                                            74 STGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYRFVLPGPSLTVAEQEQCLD 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: <Unknown>
OPERATING SYSTEM: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CITY: Waltham
STATE: Massachusetts
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: Streptococcus pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDIUM TYPE: CD/ROM ISO9660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (781)893-8277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
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Search completed: March 23, 2006, 05:30:10

В

Job time : 24.2209 secs

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Title:
Perfect score:
Sequence:
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Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                    Minimum DB seq length: 0
Maximum DB seq length: 200000000
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                                                                                                                                                                    Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM protein - protein search, using sw model
Published Applications AA_Main:*

1: /cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*

2: /cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*

3: /cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*

4: /cgn2_6/ptodata/1/pubpaa/US10A_PUBCOMB.pep:*

5: /cgn2_6/ptodata/1/pubpaa/US10B_PUBCOMB.pep:*

6: /cgn2_6/ptodata/1/pubpaa/US11_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-617-038-22
1720
1 MTEPAAWDEGKPRIITLTMN.....TEVGQDQYVWHPIVNPEASP 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         March 23, 2006, 06:14:33 ; Search time 71.2896 Seconds (without alignments) 1986.885 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                            1867569 segs, 417829326 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BLOSUM62
Gapop 10.0 , Gapext 0.5
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Copyright (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                  1867569
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

### SUMMARIES

| 66<br>66<br>77<br>78<br>79<br>88<br>88<br>110<br>111<br>111<br>113<br>114<br>115<br>116<br>117<br>117<br>118<br>118<br>118<br>118<br>118<br>118<br>118<br>118  | 1 4 W W 4 1   | i òà          |
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| 597.5<br>597.5<br>531.5<br>531.5<br>531.5<br>531.5<br>31.5<br>31.5<br>31.  | 1720<br>1720<br>1720<br>1720<br>726                                     | Score         |
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| 308<br>308<br>309<br>309<br>309<br>311<br>311<br>301<br>303<br>304<br>305<br>305<br>305<br>306<br>306<br>306<br>306<br>306<br>306<br>306<br>306<br>306<br>306  | 339   | Length [      |
| <b>ል 4 4 10 10 10 10 10 10 10 10 10 10 10 10 10 </b>   | 4444  | DB            |
| US-10-282-122A-4067<br>US-10-282-122A-4067<br>US-09-815-242-113976<br>US-09-815-242-1100<br>US-10-369-493-851<br>US-10-282-122A-555963<br>US-10-156-761-11226<br>US-10-156-761-1126<br>US-10-156-761-1126<br>US-10-156-761-1126<br>US-10-156-761-11476<br>US-10-156-761-11476<br>US-10-156-761-11476<br>US-10-156-761-11476<br>US-10-156-761-11476<br>US-10-156-761-11476<br>US-10-156-7630<br>US-10-156-7630<br>US-10-156-7630<br>US-10-156-7630<br>US-10-156-7630<br>US-10-1683-1687<br>US-10-1683-1687<br>US-10-1683-1687<br>US-10-1683-1687<br>US-10-1683-1687<br>US-10-1683-1687<br>US-10-1683-1687<br>US-10-1683-1687<br>US-10-1683-1687<br>US-10-1683-1687<br>US-10-1683-1687<br>US-10-1683-1687<br>US-10-1683-1687<br>US-10-1683-1687<br>US-10-1683-1687<br>US-10-1683-1687<br>US-10-1683-1687<br>US-10-1683-1687<br>US-10-1683-1687<br>US-10-1683-1687<br>US-10-1683-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-10-1687<br>US-1 | -10-282-122A-62<br>-10-282-122A-64<br>-10-617-038-22<br>-10-369-493-191 | ID            |
| sequence 10209, A sequence 50578, A Sequence 13976, A Sequence 13976, A Sequence 10180, A Sequence 851, App Sequence 556570, A Sequence 556570, A Sequence 11226, A Sequence 11476, A Sequence 11476, A Sequence 12209, A Sequence 52025, A Sequence 52025, A Sequence 52025, A Sequence 7067, Appl Sequence 77669, A Sequence 77669, A Sequence 77669, A Sequence 77667, A  | e 62568,<br>e 64633,<br>e 22, App<br>e 19155,                           | 1             |

| 45                 | 44                   | 43                 | 42                   | 41                   | 40                  | 39                   | 38                  | 37                   | 36                   | 35                   | 34                   | 33                  | 32                 | 31               | 30               | 29              | 28                 |
|--------------------|----------------------|--------------------|----------------------|----------------------|---------------------|----------------------|---------------------|----------------------|----------------------|----------------------|----------------------|---------------------|--------------------|------------------|------------------|-----------------|--------------------|
| 250                | 252.5                | 260                | 263.5                | 264                  | 264.5               | 266                  | 266                 | 269.5                | 270                  | 272                  | 276.5                | 276.5               | 276.5              | 279              | 279              | 279             | 279                |
| 14.5               | 14.7                 | 15.1               | 15.3                 | 15.3                 | 15.4                | 15.5                 | 15.5                | 15.7                 | 15.7                 | 15.8                 | 16.1                 | 16.1                | 16.1               | 16.2             | 16.2             | 16.2            | 16.2               |
| 309                | 321                  | 310                | 307                  | 306                  | 314                 | 307                  | 306                 | 304                  | 303                  | 304                  | 308                  | 308                 | 302                | 330              | 330              | 330             | 330                |
| ហ                  | 4                    | 5                  | 4                    | 4                    | 4                   | 4                    | 4                   | 4                    | 4                    | 4                    | 4                    | ω                   | w                  | տ                | 4                | 4.              | w                  |
| US-10-472-928-2382 | US-10-282-122A-53758 | US-10-617-320-4601 | US-10-282-122A-47216 | US-10-282-122A-71925 | US-10-724-972A-6354 | US-10-282-122A-60536 | US-10-369-493-17156 | US-10-282-122A-59615 | US-10-282-122A-45645 | US-10-282-122A-57485 | US-10-282-122A-42555 | US-09-815-242-10775 | US-09-815-242-4955 | US-10-494-836-58 | US-10-781-014-58 | US-10-098-626-4 | US-09-738-626-5624 |
| Sequence           | Sequence             | Sequence           | Sequence             | Sequence             | Sequence            | Sequence             | Sequence            | Sequence             | Sequence             | Sequence             | Sequence             | Sequence            | Sequence           | Sequence         | Sequence         | Sequence        | Sequence           |
| 2382, Ag           | 53758, 1             | 4601, A            | 47216,               | 71925, A             | 6354, A             | 60536,               | 17156,              | 59615,               | 45645,               | 57485,               | 42555,               | 10775,              | 4955, Ap           | 58, App          | 58, App          | 4, Appl         | 5624, AL           |

# ALIGNMENTS

RESULT 1

| ; LENGTH: 339 ; TYPE: PRT ; ORGANISM: Mycobacterium bovis US-10-282-122A-62568                          |  |
|---|--|
| 62568   |  |
| PatentIn ve   |  |
| ; Remaining Frior Application data removed - See File Wrapper of FALM:<br>; NUMBER OF SEO ID NOS: 78614 |  |
| 16  |  |
| ; PRIOR APPLICATION NUMBER: 60/269,308  |  |
| ; PRIOR FILING DATE: 2001-02-09   |  |
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| APPLICATION N   |  |
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| APPLICATION N   |  |
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| APPLICATION I   |  |
| FILING DATE: 2000-0   |  |
| APPLICATION N   |  |
| FILING DATE: 2000-0   |  |
| APPLICATION I   |  |
| FILING DATE: 2000-09  |  |
|   |  |
| FILING DATE: 2000-0   |  |
| ; PRIOR APPLICATION NUMBER: 60/191,078  |  |
| CURRENT FILING DATE: 2003-02-20   |  |
| CURRENT APPLICATION NUMBER: US/10/282,122A  |  |
| RENCE: ELITRA.034A  |  |
| NVENT   |  |
| Xu. H.  |  |
| Forsyth.  |  |
| - ADDITOANT - Vanamoto Robert   |  |
|   |  |
|   |  |
| • •   |  |
|   |  |
| : naserbe   |  |
| : Malone, Che   |  |
| ••  |  |
| Wang, Liar  |  |
| ; GENERAL INFORMATION:  |  |
| ion No.   |  |
| ; Sequence 62568, Application US/10282122A  |  |
| US-10-282-122A-62568  |  |

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TITLE OF INVENTION: Identification of Essential Genes in |
FILE REFERENCE: ELITRA.034A
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT FILING DATE: 2003-02-20
PRIOR APPLICATION NUMBER: 60/219,078
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
PRIOR FILING DATE: 2000-05-26
PRIOR FILING DATE: 2000-05-26
PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR APPLICATION NUMBER: 60/230,347
PRIOR FILING DATE: 2000-09-06
PRIOR FILING DATE: 2000-09-09
PRIOR FILING DATE: 2000-09-09
PRIOR FILING DATE: 2000-10-23
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR APPLICATION NUMBER: 60/253,625
PRIOR APPLICATION NUMBER: 60/253,625
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/257,636
PRIOR APPLICATION NUMBER: 60/267,636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 2
US-10-282-122A-64633
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Best Local S
Matches 339
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION
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Publication No. US20040029129A1
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                                                               APPLICATION NUMBER: 60/269,308 FILING DATE: 2001-02-16
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Prior Application data removed SEQ ID NOS: 78614
PatentIn version 3.1
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Trawick, John
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Zyskind, Judith
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Malone, Cheryl
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APPLICANT: Stryhn, Anette
FILE OF INVENTION: Therapeutic TB Vaccine
FILE REFERENCE: SSISAUSA
CURRENT APPLICATION NUMBER: US/10/617,038
CURRENT FILING DATE: 2003-07-11
PRIOR APPLICATION NUMBER: DK PA 2002 01098
PRIOR FILING DATE: 2002-07-13
PRIOR FILING DATE: 2002-08-07
NUMBER OF SEQ ID NOS: 187
SOFTWARE: PATENTIN VERSION 3.2
SEQ ID NO 22
LENGTH: 339
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US-10-617-038-22
(S-10-617-038-22)
; Sequence 22, Application US/10617038
; Publication No. US20040057963A1
; Publication No. US20040057963A1
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                                                                                                                                                                                                                                    ; TYPE: PRT ; ORGANISM: Mycobacterium tuberculosis US-10-617-038-22
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LENGTH: 339
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APPLICANT: Rosenkran
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                                                                  LGGCSTALFPAGGSTGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYRFVLPG
                                                                                                          TAACNRDDVERFFELAAEPTEVGQDQYVWHPIVNPEASP 339
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Pred. No. 7.1e-154;
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APPLICANT: Cao, Yongwei
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Slater, Steven C.
APPLICANT: Goldman, Barry S.
APPLICANT: Goldman, Barry S.
APPLICANT: Chen, Xianfeng
ITILE OF INVENTION: EXPRESSION OF MICROBIAL PROTEINS IN PLANTS WITH IMPROVED PROPERTIES
FILE REFERENCE: 38-10(52052)B
CURRENT APPLICATION NUMBER: US/10/369,493
CURRENT FILING DATE: 2003-02-28
PRIOR APPLICATION NUMBER: US 60/360,039
PRIOR APPLICATION NUMBER: US 60/360,039
PRIOR APPLICATION NUMBER: US 60/360,039
PRIOR APPLICATION NUMBER: US 60/360,039
PRIOR APPLICATION NUMBER: US 60/360,039
PRIOR APPLICATION NUMBER: US 60/360,039
PRIOR PILING DATE: 2002-02-21
NUMBER OF SEQ ID NOS: 47374
SEQ ID NO 19155
LENGTH: 310
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RESULT 5
US-10-369-493-10209
1; Sequence 10209, Application US/10369493
; Publication No. US20030233675A1
; GENERAL INFORMATION:
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Local Similarity 49.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIITLIMMPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALFPA 71
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                                                                                                                                                                RFF-ELAAEP 319
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                                                                                                                               RLFTQVKAEP 310
                                                                                                                                                                                                                                                                           TAACHRDDVERFFELAAEPTEVGQDQYVWHPIVNPEASP 339
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         56; Mismatches 100; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 726; DB 4;
Pred. No. 7.1e-60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 4; Length 310;
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; APPLICANT: Cao, Yongwei
; APPLICANT: Hinkle, Gregory J.
; APPLICANT: Hinkle, Gregory J.
; APPLICANT: Slater, Steven C.
; APPLICANT: Goldman, Barry S.
; APPLICANT: Goldman, Barry S.
; APPLICANT: Chen, Xianfeng
; TITLE OF INVENTION: EXPRESSION OF MICROBIAL PROTEINS IN
TITLE OF INVENTION: PLANTS WITH IMPROVED PROPERTIES
; FILE REFERENCE: 38-10(52052)B
; CURRENT APPLICATION NUMBER: US/10/369,493
; CURRENT FILING DATE: 2003-02-28
; PRIOR APPLICATION NUMBER: US 60/360,039
; PRIOR APPLICATION NUMBER: US 60/360,039
; PRIOR FILING DATE: 2002-02-21
; NUMBER OF SEQ ID NOS: 47374
; SEQ ID NO 10209
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Ohlsen, Kari
APPLICANT: Zyskind, Judith
APPLICANT: Zyskind, Judith
APPLICANT: Zyskind, Judith
APPLICANT: Trawick, John
APPLICANT: Trawick, John
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
APPLICANT: Yau, H.
CURRENT INCENTION: Identification of Essential Genes in Microorganisms
FILE REFERENCE: ELITRA.034A
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT FILING DATE: 2003-02-20
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
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US-10-369-493-10209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Zamudio, Cheryl
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 50578, Application US/10282122A Publication No. US20040029129A1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     190 VFLLKASVRELRECVGSELLTEPEQLAAAHELIDRGRAEVVVVSLGSQGALLATRHASHR 249
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RESULT 7
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SOFTWARE: PatentIn version 3.1
SEQ ID NO 50578
LENGTH: 505
TYPE: PRT
ORGANISM: Burkholderia mallei
                                                                                                                                                         APPLICANT: Wang,
APPLICANT: Zamud
APPLICANT: Malon
APPLICANT: Hasel
APPLICANT: Ohlse
                                                                                                                                                                                                                                                       GENERAL INFORMATION:
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               APPLICANT:
APPLICANT:
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DR APPLICATION NUMBER: 60/230,347

DR FILING DATE: 2000-09-09

DR APPLICATION NUMBER: 60/242,578

DR FILING DATE: 2000-10-23

DR APPLICATION NUMBER: 60/253,625

DR FILING DATE: 2000-11-27
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DR FILLING DATE: 2000-12-22
DR APPLICATION NUMBER: 60/267,636
DR FILLING DATE: 2001-02-09
DR APPLICATION NUMBER: 60/269,308
DR FILING DATE: 2001-02-16
DR FILING DATE: 2001-02-16
 REFERENCE:
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FILING DATE: 2000-05-26
APPLICATION NUMBER: 60/230,335
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INVENTION: Identification of STENCE: ELITRA.034A
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| RIY 496
                                                                                                                     Ohlsen, Kari
Zyskind, Judith
Wall, Daniel
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                                                                                                                                                                                            Zamudio, Carlo
Malone, Cheryl
                                                 Yamamoto, Rorsyth, R.
                                                                                                          Trawick, John
                                                                                                                                                                                  Haselbeck, Robert
                                                     Grant
Grant
O Robert
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                                                                                                                                                                                                                  Carlos
                 Essential
                 Genes
                 in Microorganisms
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APPLICANT:
APPLICANT: APPLICANT:

Carr, Grant J. Yamamoto, Rober Xu, H. Howard

Robert

Trawick, John D.

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RESULT 8
US-09-815-242-13976
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GENERAL INFORMATION:
APPLICANT: Haselbeck, Robert
APPLICANT: Ohlsen, Kari L.
APPLICANT: Zyskind, Judith W.
APPLICANT: Wall, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Remaining Prior Application data removed - See File Wrapper or PALM. NUMBER OF SEQ ID NOS: 78614
SOFTWARE: PatentIn version 3.1
SEQ ID NO 48067
LENGTH: 338
                                                                                                   Sequence 13976, Application US/09815242 Patent No. US20020061569A1
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Best Local :
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PRIOR FILING DATE: 2000-03-21
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
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PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR FILING DATE: 2000-09-06
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CURRENT FILING DATE: 2003-02-20
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PRIOR APPLICATION NUMBER: 60/267,636
PRIOR FILING DATE: 2001-02-09
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                                                                                                                                                                                                                                                                                                                                                                                                                                                              RTDAMQPSPRYLVLSGSLPPGAPDDLYATLARTAKARGSRVVVDAAGRALQAALKAGVHL
                                                                                                                                                                                                                                                                                                       RPAAVCSTVGAGDSFVGGMVWALACGVPFDDACRYALAASAASVERPGTALCTRDDVERI 329
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43.0%; Pred. No. 1e-46;
tive 48; Mismatches 1
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APPLICANT: Haselbeck, Robert
APPLICANT: Ohlsen, Kari L.
APPLICANT: Ohlsen, Kari L.
APPLICANT: Wall, Daniel
APPLICANT: Trawick, John D.
APPLICANT: Carr, Grant J.
APPLICANT: Yamamoto, Robert T.
APPLICANT: Yamamoto, Robert T.
APPLICANT: Xu, H. Howard
TITLE OF INVENTION: Identification of Essential Genes in
TITLE OF INVENTION: Prokaryotes
FILE REFERENCE: ELITRA, 011A
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CURRENT FILING DATE: 2001-03-21
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR APPLICATION NUMBER: 60/211
PRIOR FILING DATE: 2000-03-21
PRIOR PPLICATION NUMBER: 60/207,727
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR FILING DATE: 2000-05-26
PRIOR PILING DATE: 2000-10-23
PRIOR PILING DATE: 2000-10-23
PRIOR PILING DATE: 2000-11-27
PRIOR APPLICATION NUMBER: 60/253,625
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/257,931
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PRIOR APPLICATION NUMBER: 60/257,931
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PRIOR APPLICATION NUMBER: 60/257,931
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SOFTWARE: FastSEQ for Windows Version
SEQ ID NO 13976
                                                                                                                                                                                                                                                                                            GENERAL
                                                                                                                                                                                                                                                                                                                    Sequence 10180, Application US/09815242 Patent No. US20020061569A1
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Best Local (
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       CURRENT APPLICATION NUMBER: US/09/815,242
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Match 31.1%;
Local Similarity 41.4%;
es 126; Conservative 54
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                                                                                                                                                                                                                                                                                              INFORMATION
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QKIY 304
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$; Pred. No. 9.3e-42;
54; Mismatches 119; Indels
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APPLICANT: Cao, Yongwei
APPLICANT: Hinkle, Gregory J.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Slater, Steven C.
APPLICANT: Coldman, Barry S.
ITITLE OF INVENTION: EXPRESSION OF MICROBIAL PROTEINS IN TITLE OF INVENTION: PLANTS WITH IMPROVED PROPERTIES FILE REFERENCE: 38-10(52052)B
CURRENT APPLICATION NUMBER: US/10/369,493
CURRENT APPLICATION NUMBER: US-28
PRIOR APPLICATION NUMBER: US-28
PRIOR APPLICATION NUMBER: US-28
PRIOR FILING DATE: 2003-02-28
PRIOR FILING DATE: 2002-02-21
JENGTH: 309
TYDE: DET
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US-10-369-493-851
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                                                                                                                                                                                                                                                                                                                                                                                     Sequence 851, Application US/10369493 Publication No. US20030233675A1 GENERAL INFORMATION:
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Best Local :
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ORGANISM: Escherichia
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     133 DELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGLQHISS--GV 190
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FOR

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PRIOR APPLICATION NUMBER: 60/242,578
PRIOR FILING DATE: 2000-10-23
PRIOR PELICATION NUMBER: 60/253,625
PRIOR PELING DATE: 2000-11-27
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR FILING DATE: 2000-12-22
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR PILING DATE: 2001-02-16
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PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR FILING DATE: 2000-05-26
                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: FastSEQ for Windows Version
                                                                               13 RIITLIMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALFPAG
GSTGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYRFVLPGPSLTVAEQEQCL 132
                                                  RIYTLTLAPSLDSATITPQIYPEGKLRCTAPVFEPGGGGINVARAIAHLGGSATAIFPAG
                                                                                                                                                                             30.9%;
                                                                                                                                                       55;
                                                                                                                                                                             Score 531.5;
Pred. No. 1.8
                                                                                                                                                          Mismatches 119;
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FILE REFERENCE: ELITRA.034A
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT FILING DATE: 2003-02-20
PRIOR APPLICATION NUMBER: 60/191.078
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR PFLING DATE: 2000-05-23
PRIOR FILING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR FILING DATE: 2000-09-06
PRIOR FILING DATE: 2000-09-06
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US-10-282-122A-56570
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US-10-369-493-851
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                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Yamamoto, Robert
APPLICANT: Forsyth, R.
APPLICANT: Xu, H.
TITLE OF INVENTION: Identification of Essential Genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Wang,
                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                            DR FILING DATE: 2000-10-23

OR FILING DATE: 2000-10-23

OR FILING DATE: 2000-11-27

OR PELICATION NUMBER: 60/257,931

OR FILING DATE: 2000-12-22

OR APPLICATION NUMBER: 60/267,636
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                                                                                                                             APPLICATION NUMBER: 60/230,347
FILING DATE: 2000-09-09
APPLICATION NUMBER: 60/242,578
FILING DATE: APPLICATION 1
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Malone, Cheryl
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Zyskind, Judith
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NUMBER:
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                  2001-02-09
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Pred. No. 1.8e-41;
5; Mismatches 119;
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; Remaining Prior Application data
; NUMBER OF SEQ ID NOS: 78614
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 56570
; LENGTH: 309
; TYPE: PRT
; ORGANISM: Escherichia coli
US-10-282-122A-56570
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APPLICANT: Zamudio, Carlo
APPLICANT: Malone, Cheryl
                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: 60/191,078 PRIOR FILING DATE: 2000-03-21
                                                                                                                                                                                                                                            CURRENT APPLICATION NUMBER: US/10/282,122A CURRENT FILING DATE: 2003-02-20
                                                                                                                                                                                                                                                                             TITLE OF INVENTION: Identification of Essential Genes FILE REFERENCE: ELITRA.034A
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                                                                                                                 APPLICATION NUMBER: 60/206,848
FILLING DATE: 2000-05-23
APPLICATION NUMBER: 60/207,727
FILING DATE: 2000-05-26
APPLICATION NUMBER: 60/230,335
                                                FILING DATE: 2000-09-06
APPLICATION NUMBER: 60/230,347
FILING DATE: 2000-09-09
APPLICATION NUMBER: 60/242,578
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                APPLICATION
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Carr, Robert
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Forsyth, R.
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Zyskind, Judith
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DATE:
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                  NUMBER: 60/253,625
                                    2000-10-23
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Pred. No. 1.8e-41;
5; Mismatches 119;
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APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR PILING DATE: 2001-05-30
PRIOR PILING DATE: 2001-05-30
PRIOR PILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 11226
LENGTH: 317
TYPE: PRT
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PRIOR FILING DATE: 2000-12-22
PRIOR PILING DATE: 2001-02-03
PRIOR PILING DATE: 2001-02-09
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
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PRIOR PILING DATE: 2001-02-16
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PRIOR DATE: PARTICIPATION OF SEQ ID NOS: 78614
SOPTWARE: PARTICIPATION OF SEQ ID NO 55963
PRIOR DATE: 311
PRIOR DATE: 311
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US-10-156-761-11226
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 11226, Application US/10156761 Publication No. US20030119018A1 GENERAL INFORMATION:
                      Query Match
Best Local Similarity
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Best Local Similarity
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APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
                                                                               ORGANISM: Streptomyces avermitilis
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ISHIKAWA, JUN
HORIKAWA, HIROSHI
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41.1%; Pred. No. 1.8e-41;
20.6%;
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Score 355; DB 4;
Pred. No. 9.3e-25;
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                   Length 317;
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FILE REFERENCE: 249-262

CURRENT APPLICATION NUMBER: US/10/156,761

CURRENT FILING DATE: 2002-05-29

PRIOR APPLICATION NUMBER: UP 2001-204089

PRIOR FILING DATE: 2001-05-30

PRIOR APPLICATION NUMBER: UP 2001-272697

PRIOR FILING DATE: 2001-08-02

NUMBER OF SEQ ID NOS: 15109

SEQ ID NO 11476

LENGTH: 309
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Publication No. US20030119018A1
GENERAL INFORMATION:
APPLICANT: ONUGA, SATOSHI
APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
APPLICANT: HORIKAWA, HIROSHI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
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US-10-156-761-11476
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APPLICANT: HORIKAWA, HIROSHI
APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 30
178
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                                                                                                                                                                             ATGRALREQLAHTPGVVDALVPVGGATRRTIAVVDETTGDTTQLNEPGPTVTPAEWAAFQ 121
                                                                                                                                                                                                                          STGSLLMALLGDA-GVPFRVIPIAASTRESFTVNESRTAKQYRFVLPGPSLTVAE----Q 128
                                                                                                                                                                                                                                                                                                                  IITLTMNPALDITTSVDVVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTALFPAGG 73
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ARPDIVKPNAEELAELTGSH---
                                        SGVFLLKASVRELRECVGSELLTEPEQLAAAHELIDRGRAEVVVVSLGSQGALLATRHAS 247
                                                                                       EAYGELLRSASA----VALCGSLPPGVPVGAYAGLVRAARAQAVPVLLDTSGEPLRRGVA
                                                                                                                                EQCLDELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGLQH-IS 187
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EPWO--ATRDARRRG-ANTVVASLGAEG-LLAVNAEG
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                                                                                                                                                                                                                                                                                                   ; SEQ ID NO 45630
; LENGTH: 303
; TYPE: PRT
; ORGANISM: Bacillus anthracis
US-10-282-122A-45630
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US-10-282-122A-45630
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PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR FILING DATE: 2000-05-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 45630, Application US/10282122A Publication No. US20040029129A1
                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                           Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                          Remaining Prior Application data removed - See File Wrapper or PALM. NUMBER OF SEQ ID NOS: 78614
SOFTWARE: PatentIn version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR FILING DATE: 2001-02-09
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR FILING DATE: 2001-02-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Foreyth, R.
APPLICANT: Xu, H.
TITLE OF INVENTION: Identification of Essential Genes
FILE REFERENCE: ELITEA.034A
FILE REFERENCE: TANNANA ***0 / 10 / 20 7 172A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT FILING DATE: 2003-02-20
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                                                                                                                                                                                                                                         Local
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APPLICATION NUMBER: 60/257,931
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FILING DATE: 2000-09-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: 60/267,636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: 60/253,625
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE: 2000-12-22
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  125 VAEQEQCLDELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGLQ 184
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                                                                                    68 LFPAGGSTGSLLMALLGDAGVPFRVIPIAASTRESFTV---NESRTAKQYRFVLPGPSLT 124
                                                                                                                                                                         14 IITLTMNPALDITTSVD-----VVRPTEKMRCGAPRYDPGGGGINVARIVHVLGGCSTA 67
                                                                                                                                                                                                                     , 68
                                                                                                                                                                                                                 h 18.1%; Score 311; DB 4; Length 303; Similarity 29.0%; Pred. No. 1.3e-20; 89; Conservative 60; Mismatches 132; Indels
                                            LGFTGGFTGRFIKDVLQTEGVITNFVQVDGDSRINVKIKGQEETELNGQ------GPSVT
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                                                                                                                              IYTVTLNPSIDYVVQVNSLDLGAVNRAEKDMKF----PGGKGINVSRVLHRLGVENVA
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Carr, Grant
Carr, Robert
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Zyskind, Judith
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                                                                                                                                                                               110 NEQFEQLMKQIE-SMQKGDYVVLAGSVPASIPTTFYESIAAFGAEKGIRVVVDASGSALQ
CEKEKVE 292
                                                                                       RHASHRFSSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAAMLLTPGTAA 303
                                                                                                                   HVVKNKPFLIKPNHHELGELFGVEISTAEDILPYGRKLIEQG-VEHVIVSMAGDGALLFT
                            CNRDDVE 310
                                                          AEGIYEATVPKGVVINSVGÅGDSLVÅGFVGKYEQTKDIEKAFQYGVÅTGSÅTAFS--ADL
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Search completed: March 23, 2006, 06:28:10 Job time: 72.2896 secs

Thu 1%

# Published Applications AA\_New:\* 1: /cgn2 6/ptodata/1/pubpaa/USO8\_NEW\_PUB.pep:\* 2: /cgn2-6/ptodata/1/pubpaa/USO8\_NEW\_PUB.pep:\* 3: /cgn2 6/ptodata/1/pubpaa/USO7\_NEW\_PUB.pep:\* 4: /cgn2-6/ptodata/1/pubpaa/PCT\_NEW\_PUB.pep:\* 5: /cgn2 6/ptodata/1/pubpaa/USO9\_NEW\_PUB.pep:\* 6: /cgn2 6/ptodata/1/pubpaa/USI0\_NEW\_PUB.pep:\* 7: /cgn2-6/ptodata/1/pubpaa/USI0\_NEW\_PUB.pep:\* 8: /cgn2\_6/ptodata/1/pubpaa/US60\_NEW\_PUB.pep:\*

| Match Length DB ID  16.5 306 6 US-10-485-517-185 9.8 488 7 US-11-087-099-303 9.6 323 7 US-11-087-099-11203 9.6 496 7 US-11-087-099-6042 9.4 495 7 US-11-087-099-6193 8.4 473 7 US-11-087-099-6193 8.3 480 7 US-11-087-099-6193 8.3 480 7 US-11-087-099-6193 8.3 480 7 US-11-087-099-6193 8.3 480 7 US-11-087-099-6825 7.6 369 7 US-11-096-568A-6280 7.6 369 7 US-11-096-568A-6280 7.1 320 6 US-10-0793-626-3062 7.1 320 6 US-10-0793-626-3062 7.1 320 6 US-10-0793-626-3062 7.1 320 6 US-10-0793-626-3062 7.2 12 7 US-11-096-568A-3121 6.7 378 7 US-11-096-568A-3121 6.7 705 7 US-11-096-568A-3108 6.7 741 7 US-11-096-568A-3108 6.7 750 7 US-11-096-568A-3108 6.7 750 7 US-11-096-568A-3108 6.7 750 7 US-11-096-568A-3108 |
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| re Match Length DB ID  16.5 306 6 US-10-485-517-  83 16.5 306 6 US-10-485-517-  84 9.8 488 7 US-11-087-099-  85 9.6 323 7 US-11-087-099-  86 9.4 345 7 US-11-087-099-  87 9.4 345 7 US-11-087-099-  88 3 480 7 US-11-087-099-  88 3 480 7 US-11-087-099-  88 3 480 7 US-11-087-099-  89 7  |
| 08 ID 08 US-10-485-517- 07 US-11-087-099- 07 US-11-087-099- 08 US-11-087-099- 08 US-11-087-099- 08 US-11-087-099- 08 US-11-087-099- 08 US-11-096-568A 08 US-11-087-099- 08 US-11-087-099- 08 US-11-087-099- 08 US-11-087-099- 08 US-11-087-099- 08 US-11-087-099- 08 US-11-087-099- 08 US-11-087-099- 08 US-11-087-099- 08 US-11-087-099- 08 US-11-087-099- 08 US-11-087-099- 08 US-11-087-088A 08 US-11-087-088A 08 US-11-087-088A 08 US-11-087-088A 08 US-11-096-568A 08 US-11-096-568A 08 US-11-096-568A  |
| 08 ID 08 US-10-485-517- 6 US-11-087-099- 7 US-11-087-099- 7 US-11-087-099- 7 US-11-087-099- 7 US-11-087-099- 7 US-11-087-099- 7 US-11-096-568A 7 US-11-096-568A 7 US-11-096-568A 7 US-11-096-568A 7 US-11-096-568A 7 US-11-087-099- 7 US-11-087-099- 7 US-11-087-099- 7 US-11-087-099- 7 US-11-087-099- 7 US-11-086-568A 7 US-11-096-568A 7 US-11-096-568A 7 US-11-096-568A  |
| 1D  10  10  11  11  12  13  14  15  16  17  18  11  11  11  11  11  11  11  11   |
| -10-485-517-<br>-111-087-099-<br>-111-087-099-<br>-111-087-099-<br>-111-087-099-<br>-111-087-099-<br>-111-087-099-<br>-111-087-099-<br>-111-087-099-<br>-111-087-099-<br>-111-087-099-<br>-111-087-099-<br>-111-096-568A<br>-111-096-568A<br>-111-096-568A<br>-111-096-568A  |
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232 IKAVNPQGKVVNTVGSGDSTVÅGMVAGIASGLTIEKAFQQAVACGTATAFDEDLA--TRD

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| 4.               | 4.               | 4                | 4.               | .4.              | 4.                 | w                | w                 | u                    | ω                   | w                   | ļυ                 | w                | 32                   | w                    | Ų.                   | 2                  | 2                  | 2                | 2                  |
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| 5 98             | 4 98             | 3 98             | 2 98             | 1 98             |                    | 9 98.5           |                   | 7 105                | 6 105               | 5 105.5             | 4 106.5            | 3 106.5          |                      | 1 108.5              |                      |                    |                    | 7 110.5          |                    |
| 5.7              | 5.7              | 5.7              | 5.7              | 5.7              |                    |                  |                   | 6.1                  | 6.1                 | 6.1                 | 6.2                | 6.2              | 6.3                  | 6.3                  | 6.3                  |                    |                    |                  |                    |
| 6893             | 1170             | 1170             | 380              | 353              | 5291               | 388              | 319               | 378                  | 319                 | 313                 | 399                | 117              | 359                  | 323                  | 310                  | 307                | 323                | 477              | 316                |
| 7                | 7                | 7                | 7                | 7                | 7                  | 7                | σ                 | 7                    | 7                   | 7                   | 7                  | ທ                | 7                    | 7                    | 7                    | 7                  | 7                  | σ                | 7                  |
| US-11-205-109-14 | US-11-046-644-28 | US-11-046-456-28 | US-11-132-864-30 | US-11-132-864-29 | US-11-052-554A-281 | US-11-132-864-41 | US-10-793-626-786 | US-11-096-568A-12726 | US-11-087-099-10858 | US-11-098-686-11025 | US-11-087-099-2847 | US-09-995-493-40 | US-11-096-568A-10265 | US-11-096-568A-10266 | US-11-096-568A-10267 | US-11-087-099-4308 | US-11-087-099-1760 | US-10-520-820-13 | US-11-087-099-9229 |
| Seguence 14,     | Sequence 28,     | Sequence 28,     | Sequence 30,     | Sequence 29,     | Sequence 281,      | Sequence 41,     | Sequence 786,     | Sequence 12726       | Sequence 10858      | Sequence 11025      | Sequence 2847,     | Sequence 40,     | Sequence 10265       | Sequence 10266,      | Sequence 10267       | Sequence 4308      | Sequence 1760      | Sequence 13,     | Sequence 9229      |
| App1             | App1             | Appl             | Appl             | App1             | App                | Appl             | App               | 6, A                 | ,<br>8              | is,<br>A            | Αp                 | App1             | 5,<br>A              | 6, A                 | 7, A                 | , Ap               | , Ap               | Appl             | ,<br>Ap            |

# ALIGNMENTS

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RESULT 1
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SOFTWARE: Patentin version 3.1
SEQ ID NO 185
LENGTH: 306
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Publication No. US20050256299A1
GENERAL INFORMATION:
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Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: Antigenic Polypeptides FILE REFERENCE: P100629WO CURRENT APPLICATION NUMBER: US/10/485,517 CURRENT FILING DATE: 2004-02-02 PRIOR APPLICATION NUMBER: GB 0118825.9 PRIOR FILING DATE: 2001-08-02 PRIOR APPLICATION NUMBER: GB 0200349.9 PRIOR APPLICATION NUMBER: GB 0200349.9 PRIOR FILING DATE: 2002-01-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: University of Sheffield APPLICANT: Biosynexus Incorporated APPLICANT: Poster, Simon APPLICANT: Mond, James
                                                                                                                                                                                                                                                                                                                                                                                                                                                     y Match 16.5%; Score 283; DB 6; I
Local Similarity 26.6%; Pred. No. 2.5e-16;
hes 81; Conservative 66; Mismatches 139;
                                                                                                             191
                                                                                                                                                           118
          248 HRFSSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAAMLLTPGTAACNRD 307
                                                                                                                                                                                                                                                    62 FPGKFIIDTLNNSAIQSNFIEVDEDTR----INVKLKTGQETEINAPGPHITSTQFEQLL 117
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                                                                                                                                                                                                                                                                                                       74 STGSLLMALLGDAGVPFRVIPIAASTRESFTVN-ESRTAKQYRFVLPGPSLTVAEQEQCL 132
                                                                                                                                                                                                                                                                                                                                                          2 IYTVTFNPSIDYVIFTNDFKIDGLNRATATYKFAGGKGINVSRVLKTLDVESTALGFAGG
                                                             YHPLFIKPNKDELEVMFNTTVNSDTDVIKYGRLLVDKG-AQSVIVSLGGDGAIYIDKEIS 231
                                                                                                                                                        QQIKN-TTSEDIVIVAGSVPSSIPSDAYAQIAQITAQTGAKLVVDAE----KELAESVLP 172
                                                                                                                                                                                                         DELRGAAASAAFVVASGSLPPGVAADYYQRVADICRRSSTPLILDTSGGGLQHISSGV-- 190
                                                                                                     ---FLLKASVRELRECVGSELLTEPEQLAAAHELIDRGRAEVVVVSLGSQGALLATRHAS 247
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18;

Gaps

61

308

DVER 311

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GENERAL INFORMATION:

APPLICANT: Jinrui Shi
APPLICANT: David Ertl
APPLICANT: Lisa Hagen
APPLICANT: Hongyu Wang
TITLE OF INVENTION: Plant Myo-Inositol Kinase
TITLE OF INVENTION: Polynucleotides and Methods of Use
FILE REFERENCE: 035718/291638
CURRENT APPLICATION NUMBER: US/11/132,864
CURRENT FILING DATE: 2005-05-19
PRIOR APPLICATION NUMBER: 60/573,000
PRIOR FILING DATE: 2004-05-20
NUMBER OF SEQ ID NOS: 48
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Publication No. US20060041961A1
GENERAL INFORMATION:
APPLICANT: Abad, Mark S. et al.
TITLE OF INVENTION: Genes and Uses for Plant
FILE REFERENCE: 38-21(53450)B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
NUMBER OF SEQ ID NOS: 12464
SEQ ID NO 303
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US-11-132-864-7
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; TYPE: PRT
; ORGANISM: Arabidopsis thaliana
US-11-087-099-303
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US-11-087-099-303
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Publication No. US20050289670A1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       143 RLGLHCVAIGHVGDEIYGEFLLDVLHEEGI--GTVALNGGTNEKDTSSFCETL--ICWVL 198
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     85; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     h 9.8%; Score 168; DB 7; Length 488; Similarity 22.9%; Pred. No. 1.9e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                 FFE-LAAEPTE 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SFVAAIALGYIRNMPLVNTLTIANAVGAATAMGCGAGRNVAKRHQVVDLMKASKLNDEEK
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                                                                                                                                                                                                                                                                                                                                                                                               FFEQLLAENSE
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APPLICANT: Abad, Mark S. et al.
TITLE OF INVENTION: Genes and Uses for Plant Improvement
FILE REFERENCE: 38-21(53450)B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
NUMBER OF SEQ ID NOS: 12464
SEQ ID NO 11203
LENGTH: 470
TYPE: PRT
ORGANISM: Oryza sativa (japonica cultivar-group)
US-11-087-099-11203
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US-11-087-099-11203
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Publication No. US20060041961A1
GENERAL INFORMATION:
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ORGANISM: Artificial Sequence
FEATURE:
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                                                                                                                        183 LVDPFQRHGFCSRADFSDEPAFSWIRKLPAETKTAIHHSKILFCNGYAFDELFPDVISSA
                                                                                                                                                                                            125 AAARLGLRCSTLGHVGEEIYGKFLLDVLEEEGI--SVVGMLDNSDSGACRNAYETLLCWV 182
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                                                                                                                                                                                                                                                                                                                                           h 9.6%; Score 164.5; DB 7 Similarity 22.6%; Pred. No. 3.6e-06;
FVLPGPSLTVAEQEQCLD------BLRGAAASAAFVVASGSLPPGVAADYYQRV 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IDCAIDAGTAVFFDPGPRGKSLLHGTLDEQRALEHSLRLSDVLLLTSDEAE-----SL
                                                                                                                                                                                                                                                             EEGKETDLATLGNLCVDVVLSVPQLPPAPREEREAYMERLAASPPDQKFWEAGGNCNLAF 124
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                                                                                      ADICRESTPLILDTSGGG----
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; Score 165.5; DB 7;
; Pred. No. 1.8e-06;
33; Mismatches 128;

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RESULT 6
US-11-098-686-11061
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US-11-087-099-6042
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Sequence 11061, Application US/11098686
Publication No. US20060024696A1
GENERAL INFORMATION:
APPLICANT: Kapur, Vivek and Gebhart, Connie J.
TITLE OF INVENTION: NUCLEIC ACID AND POLYPEPTIDE SEQUENCES
TITLE OF INVENTION: FROM LAWSONIA INTRACELLULARIS AND METHODS OF USING
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APPLICANT: Abad, Mark S. et al.
APPLICANT: Abad, Park S. et al.
TITLE OF INVENTION: Genes and Uses for Plant Improvement
FILE REFERENCE: 38-21(53450)B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
NUMBER OF SEQ ID NOS: 12464
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NAME/KEY: unsure
LOCATION: (1)..(496)
OTHER INFORMATION: unsure at all xaa locations
3-11-087-099-6042
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TYPE: PRT
ORGANISM: Oryza sativa
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Similarity 22.6%; Pred. No. 3.9e-06;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FVLPGPSLTVAEQEQCLD------ELRGAAASAAFVVASGSLPPGVAADYYQRV 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IVHVLG-GCSTALFPAGGSTGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYR 115
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                                                                                                                                                                                                                                                                                                                      TAAIAFGFLHNLPAVSTLTLANAVGAATATGCG-AGRNVAHLDKVLQLLRE-SNINEDDT 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                    LTEPEQLAAAHELIDRG-RAEVVVVSLGSQGALLATRHASHRFSSIPMTAVSGVGAGDAM 267
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                                                                                                                                                                                                                                                                                                         APPLICANT: Abad, Mark S. et al.
TITLE OF INVENTION: Genes and Uses for Plant
FILE REFERENCE: 38-21(53450)B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
NUMBER OF SEQ ID NOS: 12464
SEQ ID NO 12426
                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 12426, Application US/11087099 Publication No. US20060041961A1 GENERAL INFORMATION:
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SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 11061
LENGTH: 345
                                                                                             Best
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CURRENT APPLICATION NUMBER: US/11/098,686
CURRENT FILING DATE: 2005-04-04
PRIOR APPLICATION NUMBER: PCT/US03/31318
PRIOR FILING DATE: 2003-10-01
PRIOR APPLICATION NUMBER: US 60/416,395
PRIOR FILING DATE: 2002-10-04
                                                                                                                                                                FEATURE:
NAME/KEY: unsure
LOCATION: (1)..(473)
OTHER INFORMATION: unsure at all Xaa locations
                                                                                                                                                                                                                                                    ORGANISM: Glycine max
                                                                                                                                                                                                                                                                            TYPE: PRT
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72; Conserv
                                                                                           Similarity
                                    PAAWDEGKPRIITLTMNPALDITTSVDVVRPTEKMRCGA-----PRYDPGGGGI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RGRAEVVVVSLGSQG-ALLATRHASHRFSSIPMTAVSGVGAGDAMVAAITVGLSRGWSLI 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AKNPNAKVLIDPRPCNIMYYALCKNIFALTPNTKETGECAGGMATSSQPELLAAGHTIMK
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IGAVGQDQSGEKIQDLLSTRGILSSIITFANRQTTVKTRVMAHRQQMIRLDHEESTSYN-
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PNSW---KHYDVATLSNLCVDIVLNVPQLPPPSPLQRKAFMDRLAQSPPDKKYWEAGGNC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ISAILANYAAGVVVSQVGTATVSPDELEEAITSLPQP 339
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KPVLVVGDIMLDNYLIGVSDRISPEAPVPIVKIENEKQSLGGAG-NVARSIAALGGKVTI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9.4%; Score 161; DB 7; ilarity 21.4%; Pred. No. 4.7e-06; Conservative 59; Mismatches 160
                                                                                           8.4%;
                                                                         Score 145; DB 7;
Pred. No. 0.00016;
0; Mismatches 169
                                                                                                                                                                                                                                                                                                                                                                                                             Improvement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      160;
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                                                                                                              Length 473;
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US-11-08-099-6193
J Sequence 6193, Application US/11087099
Publication No. US20060041961A1
GENERAL INFORMATION:
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SEQ ID NO 6193
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TITLE OF INVENTION: Genes and Uses for Plant Improvement
FILE REFERENCE: 38-21(53450)B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
372
                                                                                                                                                                                                                                                                                                       122 ----SLTVAEQEQCLD------ELRGAAASAAFVVASGSLPPGVAADYYQRVADICRR 169
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                                                                                                                                                                                                                                                                                                                                                                                            68 LFPAGGSTGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYR----FVLPGP--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20 NPALDITTSYDVVRPT------EKMRCGAP--RYDPGGGGINVARIVHVLG-GCSTA 67
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GFLHDLPAVNTLTLANAVGAATATGCG-AGRNVARLDKVLQLVRE-ADLNEDVTLW 425
                                        GLSRGWSLIKSVRLGNAAGAAMLLTPGTAACNRDDVERFFELAAEPTEVGQDQYVW 329
                                                                                    VQAGQELLKRGIRTKQVVIKMGSRGSIMITKNTISCAPAFKIDVVDTVGCGDSFTAAIAF 371
                                                                                                             LAAAHELIDRG-RAEVVVVSLGSQGALLATRHASHRFSSIPMTAVSGVGAGDAMVAAITV 273
                                                                                                                                                                        SGTAVFFDPGPRGKSLLHGTLGEQRALEHALRLSDVLLLTSDEAE-----SLTNIRNP 311
                                                                                                                                                                                                                 SSTPLILDISGGG-------LQHI--SSGVFLLKASVRELRECVGSELLTEPEQ 214
                                                                                                                                                                                                                                                            KHGFCSRADFSKEPAFSWIRKLPADIRTAIHHSKILFCNGYAFDEFFPDVIASSIDCAIC
                                                                                                                                                                                                                                                                                                                                                   GHVGEEIYGKFLLDVLQAEGI--SVVGMLENT-----NAAACRQAYETLLCWVLVDPFQ 198
                                                                                                                                                                                                                                                                                                                                                                                                                                     NLCVDVVLSVPQLPPAQQEERKAYMERLAASPPDQKFWEAGGNCNLAFAAARLGLNCSTL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KVNVIDTVGCGDSFVAAIVYGFIHNMPLVNTLAIANAVGAATAMGCG-AGRNVATLENVV 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PMTAVSGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAAMLLTPGTAACNRDDVERFF 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SDVLLLTSEEAEELTGINDPILAGOEFLKRGIRTKWVIVKMGSKGSILITASSVACAPAF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SCETLLCWVLVDPLQRHGFCSRADFCEEPILHWMSKLSSEVKMAIKN----SKXFLFC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8.3%; Score 142.5; DB 7;
22.5%; Pred. No. 0.00026;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             51; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ----VLPGPSLTVAEQEQCLDELRGAAASAAFVVA 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             162;
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US-11-096-568A-6281
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US-11-087-099-7506
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SEQ ID NO 7506
LENGTH: 480
TYPE: PRT
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                                                                                                                                                                                                                  215 LAAAHELIDRG-RAEVVVVSLGSQGALLATRHASHRFSSIPMTAVSGVGAGDAMVAAITV 273
                                                                                                                                                                                                                                                                                                                                                                                                                                          147 GHVGEEIYGKFLLDVLQAEGI--SVVGMLENT-----NAAACRQAYETLLCWVLVDPFQ 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         87 NLCVDVVLSVPQLPPAQQEERKAYMERLAASPPDQKFWEAGGNCNLAFAAARLGLNCSTL 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20 NPALDITTSVDVVRPT-----EKMRCGAP--RYDPGGGGINVARIVHVLG-GCSTA
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80; Conserv
                                                                                      GFLHDLPAVNTLTLANAVGAATATGCG-AGRNVARLDKVLQLMRB-ADLNEDITLW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LFPAGGSTGSLLMALLGDAGVPFRVIPIAASTRESFTVNESRTAKQYR----FVLPGP-- 121
                                                                                                                               GLSRGWSLIKSVRLGNAAGAAMLLTPGTAACNRDDVERFFELAAEPTEVGQDQYVW 329
                                                                                                                                                                            VQAGQELLKRGIRTKQVVIKMGSRGSIMITKNTISCAPAFKIDVVDTVGCGDSFTAAIAF
                                                                                                                                                                                                                                                                  SGTAVFFDPGPRGKSLLHGNLDEQRALEHALRLSDVLLLTSDEAE-----SLTNIRNP
                                                                                                                                                                                                                                                                                                         SSTPLILDTSGGG-------LQHI--SSGVFLLKASVRELRECVGSELLTEPEQ
                                                                                                                                                                                                                                                                                                                                                    KHGFCSRADFSKEPAFSWIRKLPVDIRTAIHHSKILFCNGYAFDEFFPDVIASSIDCAIC
                                                                                                                                                                                                                                                                                                                                                                                               ----SLTVAEQEQCLD-----ELRGAAASAAFVVASGSLPPGVAADYYQRVADICRR 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8.2%; Score 140.5; DB 7; ilarity 22.5%; Pred. No. 0.00038; Conservative 51; Mismatches 162;
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                                                                                                                                                                 ; NAME/KEY: misc_feature
; LOCATION: (1)..(361)
; OTHER INFORMATION: Ceres Seq.
US-11-096-568A-6281
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                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: Sequence-Determined DNA
TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 6281
LENGTH: 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 6281, Application US/1109656BA Publication No. US20060048240A1 GENERAL INFORMATION:
                                                                                  Matches
                                                                                                                        Query Match
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                                                                                                                                                                                                                                                 TYPE: PRT ORGANISM: Glycine max FEATURE:
                                                                                                     Local
                                         47 PGGGGINVARIVHVLGG------CSTAL-FP----AGGSTGSLLMALLGDAGVPF
                                                                                  74;
                                                                                                       Similarity
PGEGETLAARSGQTIAGGKGANQATCSAKLAYPTYFVGQVGDDAYGRLVTAGLRGGGVRL 133
                                                                                    Conservative
                                                                                                     7.6%; Score 131; DB 7; 26.1%; Pred. No. 0.0016;
                                                                                  37; Mismatches 133;
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                                                                                                                                                                                       no. 14314595
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fragments and Corresponding Polypeptides !
                                                                                                                        Length 361;
                                                                                    Indels
                                                                                    40;
                                                                                    Gaps
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RESULT 9 US-11-087-099-7506

480;

27;

Gaps

425

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RESULT 12
US-11-087-099-6825
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US-11-096-568A-6280
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Best Local S
Matches 74
Sequence 6825, Application US/11087099
Publication No. US20060041961A1
GENERAL INFORMATION:
APPLICANT: Abad, Mark S. et al.
TITLE OF INVENTION: Genes and Uses fo
FILE REFERENCE: 38-21(53450)B EP
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APPLICANT: Alexandrov, Nickolai et al.
APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence-Determined DNA Fragments and Corresponding Polypeptides
TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
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SEQ ID NO 6280
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FEATURE:
NAME/KEY: misc_feature
LOCATION: (1)..(369)
OTHER INFORMATION: Ceres Seq. ID no.
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TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       91
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                                                                                                                                                                                                                                                  SGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAAMLLTPGTA 302
                                                                                                                                                                                                                                                                                                                                                                            LQREIPDAVNA----QVAQAAKNAGVPVVLDAGGMDGPLPPQLINFVDILSPNETELARL 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNLAVVASAATGHAVVMLQSNGQNSIVYIGGANLSCWPSSLPRQHLD----LVAQAGIVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RVIPIAASTRESFTVNESRTAKQYRFV-LPGPSLTV---AEQEQCLDELRGAAASAAFVV 146
                                                                                                                                                                                                                                                                                                                                                                                                                   ASGSLPPGVAADYYQRVADICRRSSTPLILDTSG--GGL-QHISSGVFLLKASVRELREC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PGGGGINVARIVHVLGG-----CSTAL-FP-----AGGSTGSLLMALLGDAGVPF
                                                                                                                                                                                                                                                                                           TGMPTESFEEIQQAALKCHEM----GAKQVLVKLGHKGSALFVEGEKTIQQPAILAKTVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PGEGETLAARSGOTIAGGKGANQATCSAKLAYPTYFVGQVGDDAYGRLVTAGLRGGGVRL 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RVIPIAASTRESFTVNESRTAKQYRFV-LPGPSLTV---AEQEQCLDELRGAAASAAFVV
                                                                                                                                                                                                           DTTGAGDTFTAAFAVALVEGKSKKECLRFAAAAACLCVQVKGAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DTTGAGDTFTAAFAVALVEGKSKKECLRFAAAAACLCVQVKGAS 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SGVGAGDAMVAAITVGLSRGWSLIKSVRLGNAAGAAMLLTPGTA 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGMPTESFEEIQQAALKCHEM----GAKQVLVKLGHKGSALFVEGEKTIQQPAILAKTVV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7.6%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 131; DB 7; Length 36 Pred. No. 0.0017; 7; Mismatches 133; Indels
                       for Plant
                       Improvement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 369;
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                                                                                 Sequence 3254, Application US/10467657 Publication No. US20050260581A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Publication No. US20060041961A1
GENERAL INFORMATION:
APPLICANT: Abad, Mark S. et al.
TITLE OF INVENTION: Genes and Uses for Plant Improvement
FILE REFERENCE: 38-21 (53450) B EP
CURRENT APPLICATION UNMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
NUMBER OF SEQ ID NOS: 12464
SEQ ID NO 6825
LENGTH: 480
TYPE: PRT
ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS: 12464
SEQ ID NO 7668
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APPLICANT: CHIRON SPA
APPLICANT: FONTANA Maria Rita
APPLICANT: PIZZA Mariagyrazia
APPLICANT: MASIGNANI Vega
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: unsure
LOCATION: (1)..(176)
OTHER INFORMATION: unsure at all Xaa locations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: PRT
ORGANISM: Oryza sativa
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NAME/KEY: unsure
LOCATION: (1)..(480)
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                                                                                                                                                                                                                               107 GFLHNLPAVSTLTLANAVGAATATGCG-AVLSKTAVNSFSDRLVHVPT
                                                                                                                                                                                                                                                                                                                                                   215 LAAAHELIDRG-RAEVYVVSLGSQGALLATRHASHRFSSIPMTAVSGVGAGDAMVAAITV 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                368
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     166 | ICRRSSTPLILDTSGGG------LQHI--SSGVFLLKASVRELRECVGSELLT 210
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATAFGFLHDLPAVNTLTLANAVGAATATGCG-AGRNVARLDKVLQLVRE-ADLNEDITLW
                                                                                                                                                                                                                                                                        GLSRGWSLIKSVRLGNAAGAAMLLTPGTAACNRDDVERFFE-LAAEPT
                                                                                                                                                                                                                                                                                                                   IQAGQELLKRGIRTKWVVIKMGSKGSIMVTKSAVSSAPSFKIDVVDTVGCGDSFTAAIAF 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IRNPVQAGQELLKRGIRTKQVVIKMGSRGSIMITKNTISCAPAFKIDVVDTVGCGDSFTA 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AITVGLSRGWSLIKSVRLGNAAGAAMLLTPGTAACNRDDVERFFELAAEPTEVGQDQYVW 329
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; Pred. No. 0.0031;
28; Mismatches 77;
                                                                                                                                                                                                                                                                                                                                                                                                                 Score 128.5; DB Pred. No. 0.001;
                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
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US-10-793-626-3062
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TYPE: PRT
; ORGANISM: Neisseria gonorrhoeae
US-10-467-657-3254
                                                                                                                                                                                                                                                   US-10-793-626-3062
                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
APPLICANT: KIMMERLY, WILLIAM JOHN
APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS
FILE REFERENCE: PU3480US
CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILLING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILLING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: Patentin Ver: 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: GB-0103424.8
PRIOR FILING DATE: 2001-02-12
NUMBER OF SEQ ID NOS: 9218
SOFTWARE: SeqWin99, Version 1.04
SEQ ID NO 3254
                                                                                                                                                                                                                                                                                                                                                                                                          SEQ ID NO 3062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 3062, Application US/10793626 Publication No. US20050255478A1
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Best Local Similarity
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CURRENT FILING DATE: 2003-08-11
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TITLE OF INVENTION: GONOCOCCAL PROTEINS AND NUCLEIC ACIDS
FILE REFERENCE:
                                                                                                                                                                                                                                                               LENGTH: 302
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: Description of Artificial Sequence: synthetic
OTHER INFORMATION: amino acid sequence
                                                                                                                                                                                  Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             196 SVRELRECVGSEL----LTEPEQLAAAHELIDRGRAEVVVVSLGSQGALLATRHASHRFS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         141 RKYREILPEYDAIIFSDYGKGGLSHISDMIDWAKHVGKTVLIDPKGDDYEKYVGATLITP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  105 KQIATTVKLRVVARNQQLIRLDFEEHPNREVLEQIK-----------
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 201 NCAELKEVVGSWKNEGDLTEKAONLRRH--LD---LTAVLLTRSEEGMTLFSEGEPIYQP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     161 QRVADICRRSSTPLILDTSGGGLQHISS------GVFLLKA 195
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                                                                                                                                                                                  Similarity
SLLMALLGDAGVPFRVIPIAAS--TRESF-TVNESRTAKQYRFVLPGFSLTVA--EQEQC 131
                                                                                                               TTSVD-----VVRPTEKMRCGAPRYDPGGG-GINVARIVHVLGGCSTALFPAG-GSTG 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SR--TAKQYRFVLPGPSLTVAEQE-----QCLDELRGAAASAAFVVASGSLPPGVAADYY 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGINVARIVHVLGGCSTALFPAG-GSTGSLLMALLGDAGVPFRVIPIAASTRESFTVNE 107
                                                                   STNVDKFLNVKRFPKPGETLHINQAQKEFGGGKGANQAIAASRLAADTTFISKVGKDGNA 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TRAQEVYDVSGAGDTVIAGMGLGLAAGCTMPEAMYLANTAAGVVVAKLGTAVCS
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                                                                                                                                                         7.0%; Score 121; DB 6; Length 302; ilarity 23.6%; Pred. No. 0.0087; Conservative 54; Mismatches 137; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7.1%;
ilarity 21.4%;
Conservative '
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                                                                                                            241 LATRHASHRESSIPMTAVSGVGAGDAMVAAITVGLSRGWSLIKS-VRLGNAAGAAMLLTP
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                                                                                                                                                                                                                                                                                              66 NFILEDFKKAGIHTQYILTSESEETGQAFITVDEA--GQNTILVYGGANMTLSATDVEMS
GAÇASIPTRKEVE
                                      GTAAC--NRDDVE 310
                                                                                                                                                  ELPKSLLELTDIIIPNETEAELLTGISINNESDMKETATYFLDLG-ISAVLITLGEQGTY 225
                                                                                                                                                                                     LLKASVRELRECV-----GSELLT-----EPEQLAAAHELIDRGRAEVVVVSLGSQGAL
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 298
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Search completed: March 23, 2006, 06:29:31 Job time: 9.13514 secs

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mycobacterial infection; vaccine; tuberculosis; Mycobacterium tuberculosis; immunisation; antibacterial; low oxygen induced antigen.

tuberculosis low oxygen induced antigen Rv2030c

SEQ ID

NO:23

gene therapy;

ADI37302;

22-APR-2004

(first entry)

ADI37302 standard; protein;

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| 45                 | 44       | 43                 | 42                 | 41       | 40       | 39       | 38       | 37       | 36       | 35       | 34       | 33       | 32       | 31                 | 30                 | 29                 | 28       | 27       | 26              | 25         |
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| ADN26449           | AB077977 | ABU19856           | ADQ74676           | ADQ74677 | ADN26380 | ADJ72174 | ABP62762 | ADX56094 | AAE35499 | ABU41360 | ABM96789 | ABU22363 | AAE10128 | ABU22241           | AB073052           | ABU33748           | AAY11078 | ADX56098 | AAW98370        | AAP82072 · |
| Adn26449 Bacterial |          | Abul9856 Protein e | Adq74676 Streptomy | _        |          | -        | •        |          | _        | _        | _        |          |          | Abu22241 Protein e | Abo73052 Pseudomon | Abu33748 Protein e | _        |          | _               | Est        |

# ALIGNMENTS

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Use of one or more polypeptides or their fragments, which are expressed during the latent stage of the mycobacterial infection, and/or nucleic acids encoding the polypeptides, for a therapeutic vaccine against
                                                                                                                                                                              08-JUL-2003; 2003WO-DK000477
                                                                                                                                                                                                                       Mycobacterium tuberculosis.
                                                                                                                  N-PSDB; ADI37347.
                                                                                                                         WPI; 2004-122778/12.
                                                                                                                                      Andersen P,
                                                                                                                                                                 13-JUL-2002; 2002DK-00001098
                                                                                                                                                                                            22-JAN-2004
                                                                                                                                                                                                          WO2004006952-A2
                                                                                                                                                   (STAT-) STATENS SERUM INST.
                                                                                                                                      Rosenkrands I,
                                                                                                                                       Stryhn
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The present invention describes polypeptides or their fragments, which are expressed during the latent stage of a mycobacterial infection, and/or nucleic acids encoding the polypeptides, which are useful for creating a therapeutic vaccine against tuberculosis. Also described: (1) a therapeutic vaccine against tuberculosis comprising one or more polypeptides; (2) a method for treating an animal, including a human being, with tuberculosis, M. africanum or M. bovis; (3) a method for immunising an animal, including a human being, against tuberculosis

Claim 3; SEQ ID NO 23; 76pp; English.

tuberculosis.

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RESULT 2
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                    ABM91252;
                                                    ABM91252 standard;
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Best Local :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  recombinant DNA construct for expression of a nitrite reductase gene in a plant cell, and a plant cell comprising the recombinant DNA construct. The nucleic acid is useful for determining gene expression, identifying mutations in a gene of interest, and for constructing mutations in a gene of interest. Sequences given in records for SEQ IDs 9692-16825 represent a group of 7134 Mxyococcus xanthus proteins and peptides. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from USPTO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               encoding a nitrite reductase, useful for det identifying mutations in a gene of interest, mutations in a gene of interest.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to a substantially purified nucleic acid molecule encoding a nitrite reductase of SEQ ID NO. 11926. Further disclosed is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 2; SEQ ID NO 10451; 25pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New substantially purified Myxococcus xanthus nucleic acid molecule encoding a nitrite reductase, useful for determining gene expression, identifying mutations in a gene of interest, and for constructing
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Goldman
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                                                                                                                                                                                              standard;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       226 AA;
                                                                                                                                                                                                                                                                                                                                        ICVRMPEPFYSVGLWYRDFAQTEDDEVRALLAEAT----
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Pred.
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No. 8.3e-43;
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Methanosarcina 27-JAN-2005

barkeri PPPT-like protein

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                                                                                                                                                                                                                                                                                                                   cc being at least 80% identical to a fully defined sequence (SI) of 23, 233 cc or 229 amino acids as given in the specification. Also described are: an isolated nucleic acid molecule (II) comprising a nucleotide sequence (CC encoding a polypeptide comprising any one of (SI); and an antibody (AI) cc binding specifically to (I); a vector comprising (II); and a transgenic (CC cell or transgenic organism having in its genome a transgene containing (II); is useful for a method of measuring the binding of a test compound to (I), which involves providing (I), contacting a test compound (CC (II), and measuring the binding of the test compound to (I). The method (CC (II), and measuring pppT-like activity of (I). The method (II) to the second polypeptide, and measuring the binding of the test compound to the second polypeptide, and measuring the binding of the test compound (II), and measuring the binding of the test compound (II), and measuring the providing (II), contacting a test compound to (II), and measuring a ppT-like activity of (II), which involves providing (II), contacting a cotange in ppT-like activity of (II), which involves providing (II), contacting a cotange in ppT-like activity of (II). The method further involves providing a second polypeptide, contacting the test compound to the absence of the test compound is an indication that the test compound (II) in the absence of the test compound is an indication that the test compound (II), where a cotange in ppT-like activity of (II) and measuring a ppT-like activity of (II) where a cotange in ppT-like activity of (II) and measuring a ppT-like activity of (II) where a compound to the second polypeptide, where the second polypeptide is a plant or mammalian ppT-like activity of (II) and measuring ppT-like activity of the second polypeptide.

CC test polypeptide, contacting the test compound to the second polypeptide.

CC test polypeptide, and measuring ppT-like activity of the second polypeptide.

CC test polypeptide, contacting the test compound to the second p
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention describes a purified purine/pyrimidine phosphoribosyl transferase (PPPT)-like polypeptide (I) comprising an amino acid se
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    31-MAR-2003; 2003WO-US009532
                                                                                                                                                                                                                                                                                                                 Sequence 217
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                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                               VFRDRREAGRVLAELLAAYRDQPDVIVLGLARGGLPVAWEVAAALHAPLDAFVVRKLGAP 76
TGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPESTCREFAGLVDDVVCATM 196
                                                                                     GHDEFAVGALASGGRVVVNDDVVRGLRITPQQLRDIAEREGRELLRRESAYRGERPPTDI 136
                                          GNEELAMGAISSDNVLVLNEDIVSSFQISEKVINMVSENELKELKRRERIYRGDRPKPEI
                                                                                                                                    LFEDRVDAGKKLAKELSKYANRSDVLILALPRGGVPVAFEVAKELNVKMDVFIVRKLGVP
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                                                                                                                                                                                                                            46;
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Pred. No. 1.2e-39;
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                                                                                                                                                                                                                            67;
                                                                                                                                                                                                                                                                    Length 217;
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128

VTRRSPRRVFRDRREAGRVLAELLAAYRDQPDVIVLGLARGGLPVAWEVAAALHAPLDAF

Matches Query Match Best Local

98; ø

Conservative

40;

Score 464; DB 9; Pred. No. 6.4e-35; 0; Mismatches 74

DB 9; Length 220

Indels

2;

Gaps

8

Similarity

13.2%;

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RESULT 4
AEB36491
                                                                          philadelphia strains of Legionella pneumophila and to prepare recombinant (hybrid) polypeptides (II). (II) are also useful for preparation of specific antibodies (Ab), also used for detection/identification of Legionella, and some (I), specifically those involved in synthesis of surface proteins, are targets for identification of inhibitors. (II), or vectors that contain (I), are useful as vaccines and immunogenic compositions, for treatment and prevention of infections by L. pneumophila. The present squence represents the amino acid sequence of a
Sequence 220 AA;
                                                                                                                                                                                                                                                                                                      from Legionella pneumophila Paris strain. (I), and their related sequences or fragments, are useful as primers and probes for detection and amplification, including differentiation between the Paris and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          polypeptides, useful for detection or ident for treatment and prevention of infections.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AEB36491 standard; protein; 220 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New genome of Legionella pneumophila Paris strain and derived polypeptides, useful for detection or identification of the s
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(INRM )
(UYLY-)
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                                                   pneumophila protein.
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                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO 823; 660pp; English.
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Zidane N, |
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Magnier A,
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A, Kunst F,
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Vandenesch F;
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Rusniok C,
Jarraud S;
                                                                                                                                                                                                                           Sequence
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UNIV LYON 1 BERNARD CLAUDE.
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DEYICLISPMSFNAVGLWYEDFSQTEDEEVLYLL 212
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      r C, line A
Bouchier A
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Zidane N, N
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Pred. No. 7.7e-35;
7; Mismatches 72;
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                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                  The invention comprises the amino acid and coding sequence of a purine/pyrimidine phosphoribosyl transferase. The DNA and protein sequences of the invention are useful as vaccines, pesticides, and drugs for protecting plants and animals against nemacode infection. The present amino acid sequence represents a Mycobacterium tuberculosis purine/pyrimidine phosphoribosyl transferase enzyme.
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29-MAR-2002; 2002US-00113201
21-JAN-2003; 2003US-00348317
                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New isolated purine/pyrimidine phosphoribosyl transferase nucleic acid and polypeptide, useful as vaccines, pesticides for plants, soil, or seeds to confer nematode resistance, or drugs treating diseases caused
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nematode infection; nematocide; enzyme.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 M tuberculosis
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                                                                                                                                                                                                                          129;
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                                                                                                                                                          16 RVFRDRREAGRVLAELLAAYRDQPDVIVLGLARGGLPVAWEVAAALHAPLDAFVVRKLGA
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                                                                                                                                                                                                                                                   Similarity
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PFQPELAFGAIGEDGVRVLNDDVVRGTHLDAAAMDAVERKQLIELQRRAERFRRGRDRIP 120
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                                                                                                                                                                                                                                              DB 9;
.6e-31;
                                                                                                                                                                                                                                                                          Length 443;
                                                                                                                                                                                                                          Indels
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                                                                                               The invention relates to a method of screening for inhibitors of nematode purine/pyrimidine phosphoribosyl transferase (PPPT; also known as PRTase) which involves contacting a test compound with the enzyme from Meloidogyne incognita. The invention also relates to methods for antibody production. The method is useful for screening for compounds that alter the activity of PPPT. Compounds identified by the method, especially compounds that have a more powerful effect on the nematode enzyme than on plant or mammalian PPPTs, are useful for treating nematode infections, especially in plants. The present sequence is the Mycobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30-MAR-2001; 2001US-0280192P
29-MAR-2002; 2002US-00113201
21-JAN-2003; 2003US-00347776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Screening for inhibitors of nematode purine/pyrimidine phosphoribosyl transferase (PPPT), useful for treating nematode infections (especially in plants), comprises contacting a test compound with the enzyme from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Screening;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                Example; SEQ ID NO 10; 29pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Meloidogyne incognita.
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                                                                      tuberculosis PPPT-like protein.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        antibody production; nematode infection; nematocide;
purine/pyrimidine phosphoribosyl transferase-like pr
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Query Match

12.3%;

Score

431;

BB 9;

Length 443;

The invention describes a purified purine/pyrimidine phosphoribosyl transferase (PPPT)-like polypeptide (I) comprising an amino acid sequence being at least 80% identical to a fully defined sequence (S1) of 233, 233 or 229 amino acids as given in the specification. Also described are: an isolated nucleic acid molecule (II) comprising a nucleotide sequence

Sequence

443

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                                                                                                                                                                                                                                           Novel purified purine/pyrimidine phosphoribosyl transferase-like polypeptide, useful for identifying compound altering activity of purine/pyrimidine phosphoribosyl transferase-like polypeptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        31-MAR-2003; 2003WO-US009532.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                nematocide; purine/pyri
PPPT-like polypeptide;
                                                                                                                                                                                 Claim 4; SEQ ID NO 5; 50pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kloek AP,
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DB; ADU49939, AD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                            Williams DJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             purine/pyrimidine phosphoribosyl transferase-like;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         javanica purine/pyrimidine phosphoribosyltransferase.
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2; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cc encoding a polypeptide comprising any one of (SI); and an antibody (AI) conditing specifically to (II) a vector comprising (II); and a transgenic cc cell or transgenic organism having in its genome a transgene containing (II). (II) is useful for a method of measuring the binding of a test compound to (I), which involves providing (I), contacting a test compound to (II), and measuring the binding of the test compound to (II), and measuring pppT-like activity of (I). The method further involves measuring pppT-like activity of (I). The method further cc involves providing a second polypeptide, where the second polypeptide is a plant or mammalian ppT-like polypeptide, contacting the test compound to the second polypeptide. (I) is useful for identifying a compound to the second polypeptide. (I) is useful for identifying a compound that catters the activity of (I), and measuring the binding of the test compound to the absence of the test compound is an indication that the test compound contacting a second polypeptide, where the second polypeptide, where the second polypeptide, where the second polypeptide, where the second polypeptide, and measuring a ppT-like activity of (I) in the absence of the test compound is an indication that the test compound contacting a ppT-like activity of (I) in pT-like polypeptide, where the second polypeptide is a plant or mammalian ppT-like polypeptide, contacting the test compound to the second polypeptide. All is useful as therapeutic compound to protect an animal from nematodes, as reagents in experimental assays to detect presence of nematodes, as a coll stoseful as therapeutic purposes. This is the amino acid sequence of Meloidogyne javanica purine/pyrimidine phosphoribosyltransferase (ppT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 89
30-MAR-2001; 2001US-0280192P.
29-MAR-2002; 2002US-00113201.
21-JAN-2003; 2003US-00348317.
                                                                                                                                                                                                                                                             purine/pyrimidine phosphoribosyl transferase;
                                                                                                                                                                                                                                                                                                    M javanica purine/pyrimidine phosphoribosyl transferase -
                                                                                                                                                                                                                                                                                                                                                06-OCT-2005
                                                                                                                                                                                                                                                                                                                                                                                                                            AEB95272 standard; protein;
                                                                                                                                                               US2005172363-A1
                                                                                                                                                                                                    Meloidogyne javanica
                                                                                                                                                                                                                                              nematode
                                                                                                                                                                                                                                                                                                                                                                                      AEB95272;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 233
                                                                               16-FEB-2005; 2005US-00058869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                185
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39; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DDVVCATMPTPFLAVGESFWDFRQVTDEEV 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GERPPTDITGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPESTCREFAGLV 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RKIGAPGHEEYGIGAVVEGNPPELVMNEDAVKYTQPPEGYVQAMMEKQLKEIARQRNRYL 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RSPRRVFRDRREAGRVLAELLAAYRDQPD-VIVLGLARGGLPVAWEVAAALHAPLDAFVV 70
                                                                                                                                                                                                                                              infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NEVLVLETPPNFSAVGLHYTKFDQTSDEEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RKLGAPGHDEFAVGALASGG--RVVVNDDVVRGLRITPQQLRDIAEREGRELLRRESAYR 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RAATAPFKDRHDAGQKLAEALKNFRSQRDKVVVLALPRGGVPVAFEVAKSLGAPLDLLMV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GDRPPLSLAGKIAIVVDDGIATGGTARVAMKALROKNVAKALLASPLAPSDTLAELRAEG 184
                                                                                                                                                                                                                                                                                                                                              (first entry)
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                                                                                                                                                                                                                                              nematocide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12.0%; Score 420.5; DB 9; 42.4%; Pred. No. 9.3e-31; tive 43; Mismatches 75;
                                                                                                                                                                                                                                                                                                                                                                                                                              233
                                                                                                                                                                                                                                              enzyme
                                                                                                                                                                                                                                                                                                                                                                                                                              ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                214
                                                                                                                                                                                                                                                                   vaccine; pesticide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 233;
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29-MAR-2002; 2002US-00113201
21-JAN-2003; 2003US-00347776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention comprises the amino acid and coding sequence of a purine/pyrimidine phosphoribosyl transferase. The DNA and protein sequences of the invention are useful as vaccines, pesticides, and drugs for protecting plants and animals against nematode infection. The present amino acid sequence represents a Meloidogyne javanica purine/pyrimidine
                                                                                                                                                                                                                                                                           04-AUG-2005
                                                                                                                                                                                                                                                                                                                                                                                 Meloidogyne javanica.
                                                                                                                                                                                                                                                                                                                                                                                                                                      Screening; infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              06-OCT-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New isolated purine/pyrimidine phosphoribosyl transferase nucleic acid and polypeptide, useful as vaccines, pesticides for plants, soil, or seeds to confer nematode resistance, or drugs treating diseases caused
     Kloek AP,
                                                                                                                                                                                                                   27-JAN-2005; 2005US-00045942
                                                                                                                                                                                                                                                                                                                                 US2005172350-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Root-knot nematode PPPT-like protein, SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AEB93956 standard; protein; 233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          phosphoribosyl transferase enzyme.
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                                                        (DIVE-) DIVERGENCE INC.
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89; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DDVVCATMPTPFLAVGESFWDFRQVTDEEV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RKIGAPGHEEYGIGAVVEGNPPELVMNEDAVKYTQPPEGYVQAMMEKQLKEIARQRNRYL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          233 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NEVLVLETPPNÝSÁVGLHYTKÝDOTSDĚEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GDRPPLSLAGKIAI VVDDGIATGGTARVAMKALROKNVAKALLASPLAPSDTLAELRAEG
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     Williams
                                                                                                                                                                                                                                                                                                                                                                                                                                      purine/pyrimidine phosphoribosyl transferase-like protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     antibody production; nematode infection; nematocide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
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     Salmon
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Pred. No. 9.3e-31;
3; Mismatches 75
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ABM96175
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Best Local S
Matches 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Meloidogyne incognita. The invention also relates to methods for antibody production. The method is useful for screening for compounds that alter the activity of pPPT. Compounds identified by the method, especially compounds that have a more powerful effect on the nematode enzyme than on plant or mammalian PPPTs, are useful for treating nematode infections, especially in plants. The present sequence is the root-knot nematode PPPT like protein. Note: The present sequence is the SEQ ID NO: 5 which is shown on figure 2. This sequence differs from the SEQ ID NO: 5 given in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Screening for inhibitors of nematode purine/pyrimidine phosphoribosyl transferase (PPPT), useful for treating nematode infections (especially in plants), comprises contacting a test compound with the enzyme from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           02-JUN-2005
                                Goldman
                                                                                                                                               10-JUL-2000;
                                                                                                                                                                                                                                                                 21-DEC-2004.
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                                                                                                                                                                                                                                                                                                                                                                             Myxococcus xanthus.
                                                                                                                                                                                                                                                                                                                                                                                                                                      Transgenic plant; DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABM96175;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABM96175 standard; protein;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Meloidogyne incognita.
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                                                                                                                                                                                                     10-JUL-2001;
                                                                                         (MONS ) MONSANTO TECHNOLOGY LLC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            xanthus protein sequence, seq id 15374.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RKLGAPGHDEFAVGALASGG--RVVVNDDVVRGLRITPQQLRDIAEREGRELLRRESAYR 128
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                                Hinkle GJ,
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                                Slater SC,
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Pred. No. 9.3e-31;
3; Mismatches 75
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                                                                                                                                                                                                                                                                                                                                                                                                                                      gene regulation;
                                Wiegand RC;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New substantially purified Myxococcus xanthus nucleic acid molecule encoding a nitrite reductase, useful for determining gene expression, identifying mutations in a gene of interest, and for constructing mutations in a gene of interest.
                                    N-PSDB; ADU49938, ADU49953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Meloidogyne incognita.
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                                                                      WPI; 2005-012639/01
                                                                                                                                  Kloek AP, Williams DJ,
                                                                                                                                                                                                                                                              31-MAR-2003; 2003WO-US009532
                                                                                                                                                                                                                                                                                                                       31-MAR-2003; 2003WO-US009532
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96; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IEGORIILVDDGIATGGTVRAAIQALRMHRPGSIILAVPVAASQTLAELAPLADDVVCVL 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      polypeptide; nematode; therapy; enzyme
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Pred. No. 1.7e-30;
""matches 86;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ctransferase (PPPT)-like polypeptide (I) comprising an amino acid sequence (S) being at least 80% identical to a fully defined sequence (S1) of 233, 233 (C) or 229 amino acids as given in the specification. Also described are: an (S2) said molecule (II) comprising a nucleotide sequence (S2) or 233, 233 (C) encoding a polypeptide comprising any one of (S1); and an antibody (A1) (C) binding specifically to (I); a vector comprising (II); and a transgenic coccli or transgenic organism having in its genome a transgene containing (II). (I) is useful for a method of measuring the binding of a test compound to (I), which involves providing (I), contacting a test compound (C) (II), and measuring the binding of the test compound (C) (II), and measuring pppT-like activity of (I). The method (II) to the second polypeptide. (II) is useful for identifying a compound (C) to the second polypeptide. (II) is useful for identifying a compound (C) to the second polypeptide. (II) is useful for identifying a compound (C) the second polypeptide. (II) which involves providing (II), contacting the test compound (C) alters the activity of (II), which involves providing (II), contacting a test that the test compound (C) alters the activity of (II). The method further involves providing a second polypeptide, contacting a pppT-like activity of (II) in the absence of the test compound is an indication that the test compound (C) alters the activity of (II). The method further involves providing a second polypeptide, contacting the test compound (C) as reagents in experimental assays to detect presence of nematodes, as collected as the activation of the second polypeptide. (II) is second polypeptide. (II) is useful as therapeutic compound to protect an animal from nematodes, as collected as a performance of measuring ppT-like activity of the second polypeptide. (II) is sequence of nematodes, as a collected presence of measuring ppT-like activity of the amino acid (C) contactivators (C) pptD-like activators (C) pptD-like activators (C) pptD-li
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
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    nematode infection; nematocide; enzyme
                      purine/pyrimidine phosphoribosyl transferase;
                                                                     M incognita purine/pyrimidine phosphoribosyl transferase -
                                                                                                                       06-OCT-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 233
                                                                                                                                                                      AEB95271;
                                                                                                                                                                                                                      AEB95271 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 4; SEQ ID NO 4; 50pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         phosphoribosyltransferase (PPPT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      129
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                        DDVVCATMPTPFLAVGESFWDFRQVTDEEV 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GERPPTDITGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPESTCREFAGLV 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RKIGAPGHEEYGIGAVVEGNPPELVMNEDAVKYTQPPEGYVQAMMEKQLKEIARQRNRYL 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RKLGAPGHDEFAVGALASGG--RVVVNDDVVRGLRITPQQLRDIAEREGRELLRRESAYR 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RAATAPFKDRHDAGQKLAEALKNFKSQRDKVVVLALPRGGVPVAFEVAKSLGAPLDLLMV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RSPRRVFRDRREAGRVLAELLAAYRDQPD-VIVLGLARGGLPVAWEVAAALHAPLDAFVV 70
                                                                                                                                                                                                                                                                                                                                                                                                                                       GDRPPLSLAGKIAIVVDDGIATGGTARVAMKALRQKNVAKALLASPLAPSDTLAELRAEG 184
                                                                                                                                                                                                                                                                                                                                           NEVLVLETPPNFSAVGLHYTKFDQTSDEEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A,
                                                                                                                       (first
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                                                                                                                                                                                                                 protein; 233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11.9%;
41.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 417.5; DB 9;
Pred. No. 1.8e-30;
4; Mismatches 75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   purine/pyrimidine phosphoribosyl
                                                                                                                                                                                                                                                                                                                                           214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                        vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
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RESULT 14
AEB93944
ID 93944
ID 8EB93
AC AEB93
XX NEB93
XX O6-OC
XT 06-OC
XX Scree
KW infec
XX Meloi
XX Meloi
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention comprises the amino acid and coding sequence of a purine/pyrimidine phosphoribosyl transferase. The DNA and protein sequences of the invention are useful as vaccines, pesticides, and for protecting plants and animals against nematode infection. The amino acid sequence represents the Meloidogyne incognita purine/pyrimidine phosphoribosyl transferase enzyme of the inventi
                          Meloidogyne incognita
                                                     Screening; infection;
                                                                                            Southern
                                                                                                                      06-OCT-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New isolated purine/pyrimidine phosphoribosyl transferase nucleic acid and polypeptide, useful as vaccines, pesticides for plants, soil, or seeds to confer nematode resistance, or drugs treating diseases caused by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-MAR-2001; 2001US-0280192P
29-MAR-2002; 2002US-00113201
21-JAN-2003; 2003US-00348317
                                                                                                                                                 AEB93944;
                                                                                                                                                                           AEB93944 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 5; SEQ ID NO 4; 21pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N-PSDB; AEB95268, AEB95274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2005-532486/54.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16-FEB-2005; 2005US-00058869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Meloidogyne incognita.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (DIVE-) DIVERGENCE INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                     189
                                                                                                                                                                                                                                                                                                                         129
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                                                                                                                                                                                                                                                                                                                                                                            71 RKLGAPGHDEFAVGALASGG--RVVVNDDVVRGLRITPQQLRDIAEREGRELLRRESAYR 128
                                                                                                                                                                                                                                                                                                                                                                                                                                 12
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                                                                                                                                                                                                                                                                                                                                                                                                                                                           88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                      root-knot nematode
                                                                                                                                                                                                                                          NEVLVLETPPNFSAVGLHYTKFDQTSDEEV
                                                                                                                                                                                                                                                                     DDVVCATMPTPFLAVGESFWDFRQVTDEEV
                                                                                                                                                                                                                                                                                                                         GERPPTDITGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPESTCREFAGLV 188
                                                                                                                                                                                                                                                                                                                                                   RKIGAPGHEEYGIGAVVEGNPPELVMNEDAVKYTQPPEGYVQAMMEKQLKEIARQRNRYL
                                                                                                                                                                                                                                                                                                                                                                                                      RAATAPFKDRHDAGQKLAEALKNFKSQRDKVVVLALPRGGVPVAFEVAKSLGAPLDLLMV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                233 AA;
                                                                                                                                                                                                                                                                                               GDRPPLSLAGKIAIVVDDGIATGGTARVAMKALRQKNVAKALLASPLAPSDTLAELRAEG
                                                    antibody production; nematode infection; nematocide; purine/pyrimidine phosphoribosyl transferase-like protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Williams
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                      (first
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                                                                                                                     entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Salmon
                                                                                                                                                                                                                                                                                                                                                                                                                                                        44;
                                                                                                                                                                           233
                                                                                           PPPT-like protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 417.5; DB 9
Pred. No. 1.8e-30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                     218
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                                                                                            SEQ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of the invention.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and drugs
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                                                                                                                                                                                                                                                                                                184
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RESULT 15
ADB74647
ID ADB74
XX ADB74
AC ADB74
XX ADB74
XX ADB74
XX MYCOK
XX NON-1
XX NON-1
XX NYPEI
XX NYPEI
XX NYCOK
XX NYPEI
XX NYCOK
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention relates to a method of screening for inhibitors of nematode purine/pyrimidine phosphoribosyl transferase (PPPT; also known as PRTase) which involves contacting a test compound with the enzyme from Meloidogyne incognita. The invention also relates to methods for antibody production. The method is useful for screening for compounds that alter the activity of PPPT. Compounds identified by the method, especially compounds that have a more powerful effect on the nematode enzyme than on plant or mammalian PPPTs, are useful for treating nematode infections, especially in plants. The present sequence is the southern root-knot nematode PPPT-like protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Screening for inhibitors of nematode purine/pyrimidine phosphoribosyl transferase (PPPT), useful for treating nematode infections (especially in plants), comprises contacting a test compound with the enzyme from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-MAR-2001; 2001US-0280192P
29-MAR-2002; 2002US-00113201
21-JAN-2003; 2003US-00347776
                                                         Non-naturally occurring peptide; anion pump protein; tuberculosis; hypersensitivity reaction; tuberculostatic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 233 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 14; SEQ ID NO 4; 29pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Meloidogyme incognita.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               04-AUG-2005
 US6583266-B1
                               Mycobacterium leprae
                                                                                                          Mycobacterium leprae non-naturally occurring peptide #347.
                                                                                                                                           04-DEC-2003
                                                                                                                                                                        ADB74647;
                                                                                                                                                                                                     ADB74647 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (DIVE-) DIVERGENCE INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
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DB; AEB93944, AEB93947.
                                                                                                                                                                                                                                                                                    185
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                                                                                                                                                                                                                                                                                                                                                                                129
                                                                                                                                                                                                                                                                                                                                                                                                               65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         88; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                    NEVLVLETPPNFSAVGLHYTKFDQTSDEEV 214
                                                                                                                                                                                                                                                                                                                 DDVVCATMPTPFLAVGESFWDFRQVTDEEV 218
                                                                                                                                                                                                                                                                                                                                                                              GERPPTDITGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPESTCREFAGLV 188
                                                                                                                                                                                                                                                                                                                                                                                                           RKLGAPGHDEFAVGALASGG--RVVVNDDVVRGLRITPQQLRDIAEREGRELLRRESAYR 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RSPRRVFRDRREAGRVLAELLAAYRDQPD-VIVLGLARGGLPVAWEVAAALHAPLDAFVV 70
                                                                                                                                                                                                                                                                                                                                                  GDRPPLSLAGKIAIVVDDGIATGGTARVAMKALROKNVAKALLASPLAPSDTLAELRAEG 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Williams
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2005US-00045942
                                                                                                                                         (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11.9%; Score 417.5; DB 9;
41.9%; Pred. No. 1.8e-30;
tive 44; Mismatches 75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Salmon
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       233;
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Search completed: March 23, Job time : 183.055 secs

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                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to a non-naturally occurring peptide of CC Mycobacterium tuberculosis comprising an amino acid sequence CC corresponding to an anion pump protein. The invention also relates to a CC corresponding to an anion pump protein. The invention also relates to a CC non-naturally occurring nucleic acid corresponding to a DNA sequence of CC Mycobacterium tuberculosis or Mycobacterium teprae. The new peptide is CC leprae or for screening for new tuberculosis drugs. Purified proteins CC leprae or for screening for new tuberculosis drugs. Purified proteins CC response. The peptide may also be used to detect hypersensitivity reactions of individuals exposed to Mycobacterium tuberculosis or CC mycobacterium leprae. The proteins and peptides may be affixed to solid Supports to detect antibodies typical of hypersensitivity reactions, from a patient's sera. This sequence represents Mycobacterium leprae non-CC naturally occurring peptide of the invention. Note: The sequence data for this patent did not form part of the printed specification but was CC obtained in electronic format directly from USPTO at
                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                    Sequence 289 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New Mycobacterium tuberculosis anion pump peptide useful for tuberculosis vaccine and diagnosis of tuberculosis infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19-AUG-1993;
22-OCT-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24-JUN-2003
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (GENO-) GENOME THERAPEUTICS CORP
                                                                                                                                                                                                                                                                                                      y Match 11.8%; Score 415.5; DB 7;
Local Similarity 41.6%; Pred. No. 3.9e-30;
hes 97; Conservative 33; Mismatches 90;
                                                                                                                                                    112
232
                                    192
                                                                                                                                                                                          72
                                                                                                                                                                                                                                                                      12
                                                                        KLGAPGHDEFAVGALASGGRVVVNDDVVRGLRITPQQLRDIAEREGRELLRRESAYRGER
                                                                                                                                                                                                                                RSPRRVFRDRREAGRVLAELLAAYRDQPDVIVLGLARGGLPVAWEVAAALHAPLDAFVVR
VCLHTPAFFCAVGQGYCNFTQTSDAEVIALLDRAREGFGESATTATLGDPQIR 284
                                    VCATMPTPFLAVGESFWDFRQVTDEEVRRLL-----ATPTAG-PSLR 232
                                                                                                              PPTDITGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPESTCREFAGLVDDV 191
                                                                                                                                                      KLGVPFQPELAFGAIGEGGVRVTNDSVVAEADLSQDEMAAIETEQRAELMRRSERFHRRH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 396; 26pp; English.
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93US-00142558.
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                                                                                                                                                                                                                                                                                                                                                DB 7;
                                                                                                                                                                                                                                                                                                                                                Length 289;
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                                                                                                                                                                                                                                                                                                          Gaps
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| protein -       |  |
|-----------------|--|
| protein search, | Copyright  |
| using sw model  | GenCore version 5.1.7<br>(c) 1993 - 2006 Biocceleration Ltd. |

Run on: March 23, 2006, 05:11:18; Search time 27.0938 Seconds (without alignments) 2418.401 Million cell updates/sec

Title: Perfect score: Sequence: US-10-617-038-23
3508
1 VLMTAAAADVTRRSPRRVFRD.....LEVTSRWIAGENPETYPTGL 681

Scoring table: BLOSUM62 Gapop 10.0 , Gapext 0.5

Searched:

Total number of hits satisfying chosen parameters: 283416

283416 seqs, 96216763 residues

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

PIR\_80:\*
1: pir1:\*
2: pir2:\*
3: pir3:\*
4: pir4:\*

Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

| 29                 | 28                 | 27     | 26                 | 25                 | 24                 | 23                 | 22                 | 21                 | 20     | 19     | 18     | 17     | 16                 | 15                 | 14     | 13     | 12     | 11                 | 10                 | 9                  | 80                 | 7                  | 6      | υ      | 4      | ω                  | N                  | <b>–</b> | No.         | Result |
|--------------------|--------------------|--------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------|--------|--------|--------|--------------------|--------------------|--------|--------|--------|--------------------|--------------------|--------------------|--------------------|--------------------|--------|--------|--------|--------------------|--------------------|----------|-------------|--------|
| 128.5              | 128.5              | 128.5  | 128.5              | 129                | 129.5              | 130.5              | 131                | 132                | 133.5  | 136    | 140    | 145.5  | 150                | 157                | 159    | 178.5  | 185    | 199                | 220                | 224                | 241                | 276                | 431    | 540    | 668    | 780.5              | 894.5              | 3505     | Score       |        |
| 3.7                | 3.7                | 3.7    | 3.7                | 3.7                |                    |                    |                    | 3.8                |        |        | 4.0    | 4.1    | 4.3                | 4.5                | 4.5    | 5.1    | 5.3    | 5.7                | 6.3                | 6.4                | 6.9                | 7.9                | 12.3   | 15.4   | 19.0   | 22.2               | 25.5               | 99.9     | i -         | Query  |
| 3413               | 885                | 749    | 537                | 423                | 7576               | 8563               | 1275               | 1185               | 1238   | 574    | 919    | 621    | 234                | 240                | 446    | 387    | 383    | 396                | 175                | 419                | 434                | 554                | 443    | 221    | 352    | 554                | 658                | 681      | Length      |        |
| N                  | N                  | N      | N                  | N                  | N                  | N                  | N                  | N                  | N      | N      | N      | N      | N                  | N                  | N      | N      | N      | N                  | N                  | ш                  | N                  | N                  | N      | N      | N      | N                  | N                  | 2        | BB          |        |
| T17467             | A84373             | A95953 | T28683             | T11214             | T17428             | T30226             | D38164             | T36761             | T03465 | H83117 | T37062 | T46851 | F71845             | F64671             | A69750 | T36697 | E75589 | H87356             | D70305             | ESECRM             | F84332             | A75296             | B70933 | AE2055 | C70578 | T48790             | H95852             | E70942   | İb          |        |
| rifamycin polyketi | leucine-tRNA synth | c      | hypothetical prote | 3-oxoacyl-[acyl-ca | FK506 polyketide s | polyketide synthas | cobN protein - Pse | probable DNA polym |        |        | _      | ρ      | hypothetical prote | conserved hypothet | =      |        | _      | hypothetical prote | conserved hypothet | erythromycin ester | succinoglycan bios | probable erythromy | ٣      | ۳      | Ч      | hypothetical prote | hypothetical fusio | thetical | Description |        |

| 4 4 4<br>5 4 3   | 40<br>41<br>42  | 3 3<br>3 8<br>3 9  | 3 3 3<br>4 7 6   | 3 2<br>3 2                            | 30                                       |
|--|---|--|--|---------------------------------------|--|
| 125<br>124.5<br>124                                      | 125<br>125<br>125   | 126.5<br>126<br>125.5  | 127<br>127<br>127  | 127<br>127                            | 128<br>127.5                             |
| ა ა ა<br>ა ა ა   | <br>  | <br>   |  | 3.6<br>6                              | 6 6                                      |
| 2117<br>6420<br>502                                      | 1116<br>1116<br>1116<br>1321                                  | 3739<br>572<br>682   | 1361<br>1632<br>1937   | 384<br>384                            | 7463<br>3164                             |
| 000  | 000   | N N N  | N N N  | NN                                    | <b>1</b> 2                               |
| T36180<br>T30283<br>T50754                               | AC2921<br>D97695<br>T10929                                    | T17410<br>T36883<br>T36877                                     | T29435<br>C70752<br>T03224                                     | AG2790<br>F97569                      | T36248<br>WMBEH6                         |
| CDA peptide synthe polyketide synthas protochlorophyllid | cobalamin biosynth<br>cobN protein homol<br>3C3.20c protein - | polyketide synthas<br>probable DNA repai<br>probable regulator | hypothetical prote<br>probable ctpI prot<br>probable polyketid | conserved hypothet hypothetical prote | CDA peptide synthe<br>UL36 protein - hum |

## ALIGNMENTS

| 8   | 뫄   | Ş   | 망  | Q  | Дb  | Q   | 망  | Q  | 망  | 8  | Db  | Q   | Query Match<br>Best Local<br>Matches 68   |
|---|---|---|--|--|---|---|--|--|--|--|---|---|---|
| 361 YESGALRQAGFYGLDLYSLHRSIQEVISYLDKVDFRAARARARYACFDHACADDGQAYG 420 | 301 AVAAEADWPDAYRVRRYVRGLGEDTNADEALSGFERFPAMMRNTVVRDFVEWLRTRNQR 360 | 301 AVAAEADWPDAYRVNRYVRGLGEDTNADEALSGFERFAAMWRNTVVRDFVEWLRTRNQR 3 | 241 DVLRRVAIDAPGGVPTHEVLAELVGDARIVLIGESSHGTHEFYQARAAMTQWLIEEKGFG 3 | 241 DVLRRVAIDAPGGVPTHEVLAELVGDARIVLIGESSHGTHEFYQARAAMTQWLIEEKGFG 3 | 181 CREFAGLVDDVVCATMPTPFLAVGESFWDFRQVTDEEVRRLLATPTAGPSLRRPAASTAA 2: | 181 CREFAGLVDDVVCATMPTPFLAVGESFWDFRQVTDEEVRRLLATPTAGPSLRRPAASTAA 2- | 121 LRRESAYRGERPPTDITGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPEST 1 | 121 LRRESAYRGERPPTDITGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPEST 1 | 61 LHAPLDAFVVRKLGAPGHDEFAVGALASGGRVVVNDDVVRGLRITPQQLRDIAEREGREL 1: | 61 LHAPLDAFVVRKLGAPGHDEFAVGALASGGRVVVNDDVVRGLRITPQQLRDIABREGREL 1: | 1 MLMTAAADVTRRSPRRVFRDRREAGRVLAELLAAYRDQPDVIVLGLARGGLPVAWEVAAA 60 | 1 VLMTAAADVTRRSPRRVFRDRREAGRVLAELLAAYRDQPDVIVLGLARGGLPVAWEVAAA 60 | Match 99.9%; Score 3505; DB 2; Length 681; Local Similarity 99.9%; Pred. No. 1.4e-217; es 680; Conservative 1; Mismatches 0; Indels 0; Gaps |
| 20  | 60  | 360   | 300  | 300  | 240   | 240   | 180  | 180  | 120  | 120  | 0   | 0   | 0;  |

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A; Molecule type: DNA
A; Residues: 1-658 < KUR>
A; Residues: 1-658 < KUR>
A; Cross-references: UNIPROT: Q92X74; UNIPARC: UPI00000CB3E6; GB: AL591985; PIDN: CAC48488.1;
A; Cross-references: UNIPROT: Q92X74; UNIPARC: UPI00000CB3E6; GB: AL591985; PIDN: CAC48488.1;
A; Cross-references: UNIPROT: Q92X74; UNIPARC: UPI00000CB3E6; GB: AL591985; PIDN: CAC48488.1;
A; Experimental source: Strain 1021, megaplasmid pSymB
R; Galibert, F; Finan, T.M.; Long, S.R.W.; Puhler, A.; Ampe, F.; Barloy-Hubler,
pela, D.; Chain, P.; Cowie, A.; Davis, R.W.; Dreano, S.; Federspiel, N.A.; Fisher, R.F.;
L.; Hyman, R.W.; Jones, T.
Science 293, 668-672, 2001
A; A; Hyman, R.W.; Jones, T.; Keating, D.H.; Kiss, E.; Komp, C.; Lelaure,
hebault, P.; Vandenbol, M.; Vorholter, F.J.; Weidner, S.; Wells, D.H.; Wong, K.; Yeh, K.
A; Title: The composite genome of the legume symbiont Sinorhizobium meliloti.
A; Reference number: A96039; MUID:21368234; PMID:11474104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 2
H95852
H95852
C;Species: Sinorhizobium meliloti
C;Species: Sinorhizobium meliloti
C;Species: Sinorhizobium meliloti
C;Species: Sinorhizobium meliloti
C;Date: 24-Aug-2001 #sequence_revision 24-Aug-2001 #text_change 31-Dec-2004
C;Accession: H95852
R;Finan, T.M.; Weidner, S.; Wong, K.; Buhrmester, J.; Chain, P.; Vorholter, F.
R;Finan, T.M.; Weidner, S.; Wong, K.; Buhrmester, J.; Chain, P.; Vorholter, F.
R;Coc. Natl. Acad. Sci. U.S.A. 98, 9889-9894, 2001
A;Title: The complete sequence of the 1,683-kb pSymB megaplasmid from the N2-f
A;Reference number: A95842; MUID:21396508; PMID:11481431
A;Accession: H95852
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Best Local S
Matches 255
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 181
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                                                                                                                                                                                     94 VNDDVVRGLRITPQQLR-----DIAEREG--RELLRRESAY------RGERPP
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                                                                                                            TDIT-GKTVIVVDDGLA--TGASMFAAV-----QALRDAQPAQIVIAVPAAPEST
ORLMK-
                                    CREFAGLVDDVVCATMPTPFLA-----VGESFWDFRQVTDEEVRRLLATPTAGPSLRR 233
                                                                         AELRYGNIDVRVGDGTAGWPEAGPFDAILVAAGGPEIPHALKEQLDLGGHLVIPVGPPEE
                                                                                                                                                ISQPYIVALMIERAEVQPGDTVLEIGTGSGYAAAVLSRIAAYVYTIERHAGLAEVAERRF
                                                                                                                                                                                                                          RARERMITSHLSRRGIRDRHVVEAMGVVPREAFV-----DPGFEEFAYEDSALSISHGQT 60
                                                                                                                                                                                                                                                           RDQPDVIVLGLARGGLPVAWEVAAALHAPLDAFVVRKLGAPGHDEFAV--GALASGGRVV
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                                                                                                                                                                                                                                                                                                 Conservative
 VTRVNATTFEEQDLGGVRFVPLVGEYGW-----HEERAQSRARPRPAPTLPE
                                                                                                                                                                                                                                                                                                                   25.5%;
                                                                                                                                                                                                                                                                                                   81;
                                                                                                                                                                                                                                                                                               Score 894.5; DB 2;
Pred. No. 8.2e-50;
11; Mismatches 269;
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                                                                                                                                  LFHQT-ADSFLVS----ARLSRDAEAPLDVVRLGRAIGVVYLPATERQSHYLHVRPADQF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LRTRNORYESGALROAGFYGLDLYSLHRSIQEVISYLDKVDPRAAARARARYACFDHACA
DGFVWFDQTTPVEPL--GAQHIKAGVPDTFPFGL 658
                                              DAMIHIDQTRALEPLEVTSRWIAGENPETYPTGL
                                                                                             VMHDSGVGCFLIDFARHARLRDGLLKPL----LERFIGVIYRPDTERFSHYAHASLPRQF
                                                                                                                                                                                      DMGMÁREELNIGÓLCRERFGDQAALIGFGTHGGHVAÁÁSDWNGDMEVKPIRPSLEGSYER
                                                                                                                                                                                                                                   EV-WADGQLTLGQIVRERYGDESRSIGFSTYTGTVTAASEWGGIAQRKAVRPALHGSVEE
                                                                                                                                                                                                                                                                                       AERYYRIMYYAGADSWNMRDTHMFETLEHLL----NARGARSKAVVWAHNSHIGDARHT
                                                                                                                                                                                                                                                                                                                              AEVYYRAMFSGRVTSWNLRDQHMAQTLGSLLTHLDRHLDAPPARIVVWAHNSHVGDARAT
                                                                                                                                                                                                                                                                                                                                                                                  NEPSTYGRAAMTAGFRKCEEAVVRQCRELLEKQLEAGRDSG----DELLDAVQNARLVAS
                                                                                                                                                                                                                                                                                                                                                                                                                              DDGQAYGFAAAFGAGPSCEREAVEQLVDVQRNALAYARQDGLLAEDELFYAQQNAQTVRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MREHNGR--RSLPDRAGFYGLDIYNMRGSISAVLRYLDETDPEAAAVARERYGCLT-PWQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IEEKGFGAVAAEADWPDAYRVNRYVRGLGEDTNADEALSGFERFPAWWWRNTVVRDFVEW 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LVAE-AAEPLPDL-----DDPAFGLLFDRFAGRRIVLLGEASHGTSEFYRARAAITRRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IEEHGFAIVAVEADWPDAAAVDRYVRHRRQGIRLD---APFQRFPTWMWRNREVMDFVEW
                                              681
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hypothetical protein 13E11.380 [imported] C;Species: Neurospora crassa C;Date: 05-May-2000 #sequence\_revision C;Accession: T48790 A; Map position: A; Introns: 346/1 C; Superfamily: u R;Schulte, U.; Aign, V.; Hoheisel, J.; Bran submitted to the Protein Sequence Database, A;Reference number: Z24541 A;Cross-references: UNIPROT:Q9P6X8; UNIPARC:UPI000017B43F; A;Experimental source: cosmid contig 13E11; strain 74 A; Molecule type: DNA A; Residues: 1-554 < SCH > A; Gene: NCSP:13E11.380 A; Status: preliminary A; Accession: T48790 ;Superfamily: uncharacterized conserved protein with erythromycin Query Match Local Similarity 22.2%; Scor 1.4c 38.8%; Pred. No. 1.4c 174; Hismatches 174; Mismatches 174; [imported] Brandt, P.; Fartmann, base, April 2000 05-May-2000 #text\_change Neurospora Length crassa EMBL:AL353820; В., 31-Dec-2004 Holland, R.; esterase GSPDB:GN00112; domain Nyakatura,

85

RRLLATPTAGP--SLRR----PAASTAADVLRRVAIDAPGGVPTHEVLA--ELVGDARI

Indels

57;

Сарв

17;

Conservative

RQSTPQPPASPLELLRRHVHPFPSLSEALD------DPKKDIFRYFDSFSSAKV

LHRSIQEVISYLDKVDPRAAARARARYACFDHAC--ADDGQAYGFAAAFGAG---PSCER

433 251 378 192 323 132

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IESEAEARRAGREPSFMRFPRWMWRNKETHDFVEWLRCWNKGKDM-KKEATGFYGLDLYS -DTNADEALSG----FERFPAWWRNTVVRDFVEWLRTRNQRYESGALRQAGFYGLDLYS LLIGDASHGTSEFYAFRAALTRYMIEHHSYNIVACEADWPDAESIDRYVRRRPGPGPRAT VLIGESSHGTHEFYQARAAMTQWLIEEKGFGAVAAEADWPDAYRVNRYVR----GLGE---

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C.Species: Mycobacterium tuberculosis
C.Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 09-Jul-2004
C;Accession: C70578
C;Accession: C70578
R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, Connox, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, 537-544, 1998
Nature 393, 537-544, 1998
A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G.
A;Authors: Deciphering the biology of Mycobacterium tuberculosis from the complete genon A;Reference number: A70500; MUID:98295987; PMID:9634230
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C70578

C70578

Cypethetical protein Rv2143 - Mycobacterium tuberculosis (strain H37RV)

Cypeties: Mycobacterium tuberculosis

Cypeties: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 09-Jul-2004
RESULT 5
ABZ055
hypothetical protein all1995 [imported] - Nostoc sp. (strain PCC 7120)
C;Species: Nostoc sp. PCC 7120
A;Note: Nostoc sp. strain PCC 7120 is a synonym of Anabaena sp. strain PCC 7120
C;Date: 14-Dec-200  #sequence_revision 14-Dec-2001 #text_change 09-Jul-2004
C;Accession: AE2055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Residues: 1-352 <COL>
A;Residues: 1-352 <COL>
A;Cross-references: UNIPROT:006232; UNIPARC:UPI00000D0FBB; GB:Z95388; GB:AL123456;
A;Experimental source: strain H37Rv
C;Genetics:
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Best Local
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                                                                                                                                                                                                                               EFAGLVDDVVCATMPTPFLAVGESFWDFRQVTDEEVRRLLATPTAG 228
                                                                                                                                                                                                                                                                                                                                  RESAYRGERPPTDITGKTVIVVDDGLATGASMFAAVQALRDAQFAQIVIAVFAAFESTCR 182
                                                                                                                                                                                                                                                                                                                                                                                         AELDVFLVRKLGVPQWRELAMGALASGGGVVMNDDVVSSLRITDQQVRAAIDSETAELQR
                                                                                                                                                                                                                                                                                                                                                                                                                  APLDAFVVRKLGAPGHDEFAVGALASGGRVVVNDDVVRGLRITPQQLRDIAEREGRELLR 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MTAAADVTRRSPRRVFRDRREAGRVLAELLAAYRDQPDVIVLGLARGGLPVAWEVAAALH 62
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                                                                                                                                                                                                                                                                                             MNPPSGFLRRTPTRRFRDRRDAGRVLADELASYRGRDRLLVLGLARGGVPVGWEVASALG 183
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                                                                                                                                                                                                        ELAAEADDVVCATMPAAFEAVGQVYNDFHQVTDDEVRELLATPTTG
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Pred. No. 1.3e-35;
25; Mismatches 63
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hypothetical protein Rv057lc - Mycobacterium tuberculosis (strain H37RV)
C;Species: Mycobacterium tuberculosis
C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 09-Jul-2004
C;Accession: B70933
R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Go
Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holr
Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S.
Nature 393, 537-544, 1998
A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G.
A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete
A,Reference number: A70500; MUID:98295987; PMID:9634230
A;Accession: B70933
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A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-221 < KUR>
A;Residues: 1-221 < KUR>
A;Cross-references: UNIPROT:Q8YVI3; UNIPARC:UPI00000CE2A1; GB:BA0000019; PIDN:BAB73694.1;
A;Experimental source: strain PCC 7120
C;Genetics:
C;Genetics:
A;Gene: all1995
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A;Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium Anal A;Reference number: AB1807; MUID:21595285; PMID:11759840
A;Accession: AB2055
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A; Residues: 1-443 < COL>
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A;Experimental source: strain H37Rv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         108;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KGQTVILVDDGLATGATMAAIIAVRQQQPKEIVIAVPVAAPETCEEMQSKVEKIFCANT 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GHDEFAVGALASGGRVVVNDDVVRGLRITPQQLRDIAEREGRELLRRESAYRGERPPTDI 136
LTGRIAVIVDDGIATGATAKAACQVARAHGADKVVLAVPIGPDDIVARFAGYADEVVCLA 180
                                                                                                                                        PGHDEFAVGALASGGRVVVNDDVVRGLRITPQQLRDIAEREGRELLRRESAYRGERPPTD 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPESTCREFAGLVDDVVCATM 196
                                  ITGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPESTCREFAGLVDDVVCAT 195
                                                                                           PFQPELAFGAIGEDGVRVLNDDVVRGTHLDAAAMDAVERKQLIELQRRAERFRRGRDRIP 120
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                                                                                                                                                                                                                                                                                                      12.3%; Score 431; DB 2 32.4%; Pred. No. 3e-20;
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                                                                                                                                                                                                                                                                                52; Mismatches 161;
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                                                                                                                                                                                                                                                                                                                            DB 2; Length 443
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probable erythromycin esterase - Deinococcus radiodurans (strain R1)
(;Species: Deinococcus radiodurans
(;Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 31-Dec-2004
(;Accession: A75296
R;White, O.; Eisen, J.A.; Heidelberg, J.F.; Hickey, E.K.; Peterson, J.D.; Dodson,
M.; Shen, M.; Vamathevan, J.J.; Lam, P.; McDonald, L.; Utterback, T.; Zalewski,
S.; Smith, H.O.; Venter, J.C.; Fraser, C.M.
Science 286, 1571-1577, 1999
A;Title: Genome sequence of the radioresistant bacterium Deinococcus radiodurans
A;Reference number: A75250; MUID:20036896; PMID:10567266
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C; Superfamily: uncharacterized conserved protein with erythromycin esterase
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: UNIPROT:Q9RS70; UNIPARC:UPI00000D3F72; GB:AE002058; GB:AE000513; A;Experimental source: strain R1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: DNA
A; Residues: 1-554 < WHI>
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Best Local Similarity
                                                                                                                                                                                                            299
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                                                                                                                                                                                                                                                                               241 DVLRRVAIDAPGGVPTHEVLAEL--VGDARIVLIGESSHGTHEFYQARAAMTQWLIEEKG
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                                                                                                                                                                                                                                                                                                                                                  201 LAVGESF-----WDFRQVTDEEV------RRLLATPT-AGPSLRRPAASTAA 240
                                                                                                                                                                                                                                                                                                                                                                                                                       141 VIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPESTCREFAGLVDDVVCATMPTPF 200
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                                                                                                                                                                                                                                                                                                                                                                                    74 LTARAPGLTFKSAQVTALKLVRQGQTYNVTAQVRSEGE---YDLGG-----QKMPV 121
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                                    KAF-----AQALARTVQQAVL--
                                                                  YGFAAAFGAGPSCEREAVEQLVDVQRNALAYARQDGLLAEDELFYAQQNAQTVRDAEVYY 478
                                                                                                       A--ARGSKPALNFVAVDMQDPGGSAALLGTLVPGLSAAAAPFAKLEPYQIDELVKDPAQQ 347
                                                                                                                                                                                                            FGAVAAEADWPDAYRVNRYVRGLGEDTNADEALSGFERFPAWMWRNTVVRDFVEWLRTRN
                                                                                                                                                                                                                                              PLLRPV---NPSGTGVAD-LAFLTPLAQARLIGVGEGSHGTHEHFVLKARIFKALVQEHG
                                                                                                                                                                                                                                                                                                                VQTGETLDTWQKLGGRW----QIVDSRALNAQVDLGGNRQVLADPAPLSPASRAALVAALR 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ALAGGAG---NPDEAAIRRSYQELMRATVAGDSATILRFYAPKFSGYGPRYEP--ITREM 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ALASGGRVVVNDDVVRGLRITPQQLRDIAEREGRELLR----RESAYRGERPPTDITGKT 140
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RAMFSGRVTSWNLRDQHMAQTLGSLLTHLDRHLDAPPARIVVWAHNSHVGDARATEVWAD
                                                                                                                                       QRYESGALRQAGFYGLDLYSLHRSIQEVISYLDKVDPRAAARARYACFDHACADDGQA 418
                                                                                                                                                                          FTTLAFEANPARAQAVQAYISGESADLTAAVNGLGFS----VWRTAEIRDLLVWMRGYN
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T.; Zalewski,
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                                                                                      355
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                   VAFDALAFLPETTRARPLD
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R:Ng, W.V.; Kennedy, S.P.; Mahairas, G.G.; Berquist, B.; Pan, M.; Shukla, H.D.; Leithauser, B.; Keller, K.; Cruz, R.; Danson, M.J.; Hough, D.W.; Maddocks, D.G. Jung, K.H.; Alam, M.; Freitas, T. Proc. Natl. Acad. Sci. U.S.A. 97, 12176-12181, 2000
A;Authors: Hou, S.; Daniels, C.J.; Dennis, P.P.; Omer, A.D.; Ebhardt, H.; Lowe, A;Title: Genome sequence of Halobacterium species NRC-1.
A;Reference number: A84160; MUID:20504483; PMID:11016950
A;Accession: F84332
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A;Molecule type: DNA
A;Residues: 1-434 <STO>
A;Cross-references: UNIPROT:Q9HP44; UNIPARC:UPI0000063996; GB;AE004437; NID:g10581262;
C;Genetics:
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C;Species: Halobacterium sp. NRC-1
C;Date: 02-Feb-2001 #sequence_revision 02-Feb-2001 #text_change 09-Jul-2004
C;Accession: F84332
                                                                                                                                                                                                                                                                                                                                                 256 ADTLTHA-RVRDEAMAENAEWVREFTGTDILPVWAHDAHI--ARTGLQYGERVPSLGQHL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MTDD-----TTTTTAQHTDRTTALAAHATELH-----GTDPTRPIDDLDALRAHLTDA
                                                      --FDAMIHIDQTRALEPLE 663
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; Pred. No. 4.8e-08;
67; Mismatches 192
433
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A;Gene: ereB
C;Function:
A;Description: erythromycin esterase [validated, MUID:86259072]
C;Superfamily: erythromycin esterase
C;Keywords: antibiotic resistance; carboxylic ester hydrolase
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Nucleic Acids Res. 14, 4987-4999, 1986
A;Title: Analysis of the nucleotide sequence of the ereB
A;Reference number: A24381; MUID:86259072; PMID:3523438
A;Accession: A24381
                  Nature 392, 353-358, 1998
A;Title: The complete genome of the hyperthermophilic bacterium Aquifex aeolicus
A:Reference number: A70300; MUID:98196666; PMID:9537320
                                                                                                                                  RESULT 10
D70305
Conserved hypothetical protein aq_059 - Aquifex aeolicus
conserved hypothetical protein aq_059 - Aquifex aeolicus
C;Species: Aquifex aeolicus
C;Date: 08-May-1998 #sequence_revision 08-May-1998 #text_change 09-Jul-2004
C;Accession: D70305
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A;Reference number: A70300; MUID:98196666; PMID:9537320
A;Accession: D70305
A;Status: preliminary; nucleic acid sequence not shown; translation
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C;Date: 30-Sep-1988 #sequence_revision 30-Sep-1988 #text_change 31-Dec-200.
C;Accession: A24381
                                                                                                                  R;Deckert, G.; Warren, P.V.; Gaasterland,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;Genetics:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ASVYYRAMF---SGRVTSWNLRDQHMAQTLGSLLTHLDRHLDAPPARIVVWAHNSHVGDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QAYGFAAAFGAGPSCEREAVEQLVDVQRNALA--YARQDGL-LAEDELFYAQQNAQTVRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GOGTODEIGRFLKHF-YYPEEL-KTTFL----WLR----EYNKAAKEKITFLGIDIPRN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LRKIIGDTRVVALGENSHFIKEFFLLRHTLLRFFIEDLGFTTFAFEFGFAEGQIINNWIH
                                                                                                                                                                                                                                                                                                                                                                                                           RPALHGSVEELFH---QTADSFLVSARLSRDAEAPLDVVRLGRAIGVVYLPATERQSHYLH 640
                                                                                                                                                                                                                                                                                                                                                                                                                                                 QKTPILYDGFLSCLPMGQRLKNAIGDDYMSLGITSYSGHTAALYPEVDTKYGFRVDNFQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           YNIQAMSGFISGGGMQGDMGAKDKYMAD---SVLWHLKN--PQSEQKVIVVAHNAHI---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGSYLPNMEIVHDFFRTADKEALH-IIDDAFNIAKKIDYFSTSQAALNL----HELTD--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GLGEDTNADEALSGFERFPAWMWRNTVVRDFVEWLRTRNQRYESGALRQAGFYGLDL---
                                                                                                                                                                                                                                                                                             AELEKAFDGIFQIEKSSVSE
                                                                                                                                                                                                                                                                                                                               VRPADQFDAMIHIDQTRALE
                                                                                                                                                                                                                                                                                                                                                                     QEPNEGSVEKAISGCGVTNSFVFFRNIPEDLQSIPNMIRF-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----SEKCRLTSQLARVKVRLEAMAPIHIEKYGIDKYETILHYA--NGMIYLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----YSLHRSIQEVISYLDKVDPRAAARARARYACFDHACADDG
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Pred. No. 5.6e-07;
                                                                                                                                                                                                                                                                                                                                 660
                                                                                                                                                                                                                                                                                             415
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                                                                                                                T.; Young, W.G.; Lenox,
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                                                                                                                  A.L.; Graham,
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R.Nierman, W.C.; Feldblyum, T.V.; Paulsen, I.T.; Nelson, K.E.; Eisen, J.; Heidelberg, J.! B.; Laub, M.T.; DeBoy, R.T.; Dodson, R.J.; Durkin, A.S.; Gwinn, M.L.; Haft, D.H.; Koloni n, J.; Ermolaeva, M.; White, O.; Salzberg, S.L.; Shapiro, L.; Venter, J.C.; Fraser, C.M. Proc. Natl. Acad. Sci. U.S.A. 98, 4136-4141, 2001
A;Title: Complete Genome Seguence of Caulobacter crescentus.
A;Reference number: A87249; MUID:21173698; PMID:11259647
A;Status: preliminary
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A; Residues: 1-175 < AQF >
A; Cross-references: UNIPROT: 066471;
A; Experimental source: strain VF5
C; Genetics:
A; Gene: aq_059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: UNIPROT:Q9A9U4; UNIPARC:UPI00000C71CC; GB:AE005673; NID:g13422126; C;Genetics:
A;Gene: CC0867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C;Species: Caulobacter crescentus
C;Date: 20-Apr-2001 #sequence_revision
C;Accession: H87356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: DNA
A; Residues: 1-396 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 hypothetical protein CC0867 [imported] - Caulobacter crescentus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                  LFEANHYDFMALTRTADQGGRVEPRMIDAAIGG-----VWNRTREIQPLAPFLASRLA 133
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                                                                                                                                                      DAEVYYRAMFSGRVTSWNLRDQHMAQTLGSLLTHLDRHLDAPPARIVVWAHNSH-VGDAR 531
                                                                                                                                                                                                           RTGQVQDTLLA-----CLEEARSRLAVAEPRKARRAFYQEALRA------MTRAVR
                                                                                                                                                                                                                                                                                                               ARRIRLGGLDDQLGSYGA-LYANDKLPDEVTGYL-PFERRQVCREALRREIYADYGSADG 191
                                                                                                                                                                                                                                                                                                                                                            NORYESGAL-ROAGFYGLDLYSLHRSIQEVISYLDKVDPRAAARARAR --- YACFDHACA 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAEADWPDAYRVNRYV--RGLGEDTNADEALSGFERFPAWMWRNT-VVRDFVEWLRTR--
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                                             ATEVWADGQLTLGQIVRERYGDESRSIGFSTYTGTVTAASEWGGIAQRKAVRPALHGSVE 591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PESTCREFAGLVDDVVC-ATMPTPFLAVGESFWDFRQVTDEEVRRLL
AFGAPAAEDILGGRIAR-REGGDAFSLGFSAGGGSYRRSRD-----RTQPIEPAPAGSLE
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27.7%;
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Pred. No. 2.1e-05;
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Pred. No. 3.2e-07;
2; Mismatches 78
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ELFHQTADSFLVSARLSRDAEAPLDVVRLGRAIGVVYLPATERQSHYLHVRPAD---QFD

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hypothetical protein SCH66.09 - Streptomyces coelicolor C;Specises: Streptomyces coelicolor C;Specises: Streptomyces coelicolor C;Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 31-Dec-2004 C;Accession: T36697 R;Murphy, L.; Harris, D.; Bentley, S.D.; Parkhill, J.; Barrell, B.G.; Rajandream, submitted to the EMBL Data Library, April 1999 A;Reference number: 221597
                                                                                                                                            RESULT 13
T36697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Molecule type: DNA
A;Molecule type; DNA
A;Residues: 1-383 <WHI>
A;Cross-references: UNIPROT:O32505; UNIPARC:UPI00000D3B25; GB:AE001863; GB:AE001825; NIU
A;Frnerimental source: strain R1
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R;White, O.; Eisen, J.A.; Heidelberg, J.F.; Hickey, E.K.; Peterson, M.; Shen, M.; Vamathevan, J.J.; Lam, P.; McDonald, L.; Utterback, S.; Smith, H.O.; Venter, J.C.; Fraser, C.M.

Science 286, 1571-1577, 1999
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            hypothetical protein - Deinococcus radiodurans (strain C;Species: Deinococcus radiodurans C;Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #tex
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;Map position: 2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEALSGFERFPAWMWRNTVVRDFVEWLRTRNQRYESGALRQAGFYGLD-------
                                                                                                                                                                                                                                                                        QTADSFLVSARLSRDAEAPLDV
                                                                                                                                                                                                                                                                                                                                                      GQIVRERYGDESRSIGFSTYTGTVTAASEWGG-----IAQRKAVRPALHGSVEELFH 595
                                                                                                                                                                                                                                                                                                                                                                                             ARMLA--ARDLLMA---GHLLAIAEREQRCGPT--LVFAHNLHL-----
                                                                                                                                                                                                                                                                                                                                                                                                                                        GRVTSWNLRDQHMAQTLGSLLTHLDRHLDAPPARIVVWAHNSHVGDARATEVWADGQLTL 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EVMRTGFSHD----FGRRAANRELVGWLRDFNA--GRSADEQVHFYGFDPPMENLWAASPR 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QLLALGEPNHTDDAFPAQRNRLFRTLVEEYGFRSIALESDILAGQRVNAYVTG-GADDLE 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AMIHIDOTR
                                                                                                                                                                                                                                                                                                               S---RMKMG--AQKIGAQTL---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SDEARQLRVLTDDLLHRLE-TGAPGLAEQPDFWEAQLAARTAAGLLRYHAVMADPAPDRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SCEREAVEQLVDVQRNALAYARQDGLLAEDELFYAQQNAQTVRDAEVYYRAMFS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          --LYSLHRSIQEVISYLDKVDPRAAARARARYACFDHACADDGQ----AYGFAAAFGAGP 429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GVVVFQQER
                                                                                                                                                                                                                               -----LVPSSELTEAAATQLSV
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25.9%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 185; DB 2;
Pred. No. 0.00016;
                                                                                                                                                                                                                                                                                                                   DWWGAGAHVSRRLGERYAFIASYPGAAEETF-
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T.; Zalewski,
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A;Cross-references: UNIPROT:Q9X941; UNIPA
A;Experimental source: strain A3(2)
C;Genetics:
A;Gene: SCOEDB:SCH66.09
C;Superfamily: uncharacterized conserved
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A; Residues: 1-387 < MUR>
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A;Status: preliminary; translated
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Best Local
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                                                                                                                                                                                                                                                              AERIATLYA-
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                                                                                                                                                                                                                                                                                                                                                                                                                          FYQARAAMTQWLIEEKGFGAVAAEADWPDAYRVNRYV-RGLGE-DTNADEALSGFERFPA
                              VRLGRAIGVVYLPATERQSHYLHVRPADQ-----FDAMIHIDQTRALEPLEVTS
                                                              TFSEGSLNALPDFTAGQPQKYAVDPAPAGHNEHTLDQVRHRDFALDLRTAPPAARAWLDT
                                                                                             STYTGTVTAASEW-GGIAQRKAVRPALHGSVEELFHQTAD-SFLVSARLSRD-AEAPLDV 617
                                                                                                                             AWWLAHTN-----GRILLASNNGHV--AYTSDNPQEFPEPVGAFLRKKLGRKYVSVGL
                                                                                                                                                            GSLLTHLDRHLDAPPARIVVWAHNSHVGDARATEVWADGQLTLGQIVRERYGDESRSIGF
                                                                                                                                                                                            ERALTLLCASGRPRGSAGRAYNWAVQNATAVAQSFTGYAFPDEEFPERMRYRDQAMADNT
                                                                                                                                                                                                                              EDELF-----
                                                                                                                                                                                                                                                                                           AARARARYACFDHACADDGQAYGFAAAFGAGPSCEREAVEQLVDVQRNALAYARQDGLLA
                                                                                                                                                                                                                                                                                                                           --WDTDEYLDLIRWMRHYNVSHPGRPTLR---FVGNDLGYPGPEAFDQVTSYVTAHRPGV 124
                                                                                                                                                                                                                                                                                                                                                                                            FLQAAPGSREQLANPRGFTTFVLEASWSTGLRLDTYVTRGLGDPEQIMREEFQGQYVF--
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5.1%;
                                                                                                                                                                                                                              ----YAQQNAQTVRDAEVYYRAMFSGRVTSWNLRDQHMAQTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                            47; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 178.5; DB 2; Pred. No. 0.00043;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          UNIPARC: UPI00000B02A; EMBL: AL049731;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GB/EMBL/DDBJ
-SDQDPETALGRSYDIVIHLHRVEAARLWAFTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein with
                                                                                                                                                                                                                                                              GLRPARSASAGAWMGQQLTKDLASRRAEAARA
                                                                                                                                                                                                                                                                                                                                                                                                                                                              188;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            387;
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A;Residues: 1-446 <KUN>
A;Residues: 1-446 <KUN>
A;Cross-references: UNIPROT:O31455; UNIPARC:UPI000005FE92; GB:Z99105;
A;Experimental source: strain 168 erythromycin esterase homolog ybfO - Bacillus subtilis C;Species: Bacillus subtilis C;Species: 05-Dec-1997 #te:C;Date: 05-Dec-1997 #te:C:Date: 05-Dec-A; Status: preliminary; nucleic acid sequence not shown; translation A; Accession: A69750 A; Molecule type: DNA ;Genetics: 05-Dec-1997 #text\_change 09-Jul-2004 not GB:AL009126; NID:92

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| Ş  | 용 <i>성</i>  | B <i>청</i>  | Query Ma<br>Best Loc<br>Matches   | A;Authors A;Title: A;Referer A;Accessi A;Accessi A;Status: A;Molecul A;Residue A;Cross-1 C;Genetic A;Start  | R;Tomb, J<br>Petersor<br>son, J.D.<br>Nature 38  | RESULT 15<br>F64671<br>conserved<br>C;Species<br>C;Date:   | DЪ                      | Q                     | g :                     | § | 당 성  | ръ  | δ                                | 당 5  | ₹ ₽   | Ş | Db  | Ş   | Db  | á  | Query M<br>Best Lo<br>Matches   |
|--|---|---|---|---|--|--|-------------------------|-----------------------|-------------------------|---|--|---|----------------------------------|--|-------|---|---|---|---|--|---|
| 121 LRRESAYRGERPPTDITGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPEST 180 | 62 HAPLDAFVVRKLGAPGHDEFAVGALASGGRVVVNDDVVRGLRITPQQLRDIAEREGRE-L 120 | 2 LMTAAADVTRRSPRRVFRDRREAGRVLAELLAAYRDQPDVIVLGLARGGLPVAWEVAAAL 61<br> | Match 4.5%; Score 157; DB 2; Length 240;<br>Local Similarity 21.5%; Pred. No. 0.0054;<br>les 50; Conservative 49; Mismatches 132; Indels 2; Gaps 2; | A;Authors: Wallin, E.; Hayes, W.S.; Borodovsky, M.; Karpk, P.D.; Smith, H.O.; Fraser, C. A;Title: The complete genome sequence of the gastric pathogen Helicobacter pylori. A;Reference number: A64520; MUID:97394467; PMID:9252185 A;Accession: F64671 A;Accession: F64671 A;Status: preliminary; nucleic acid sequence not shown; translation not shown A;Molecule type: DNA A;Residues: 1-240 <tom> A;Cross-references: UNIPROT:025813; UNIPARC:UPI00000C0903; GB:AE000627; GB:AE000511; NID C;Genetics: C;Genetics: GTG</tom> | ge, A.R.; Clayton, R.A.; Sutton, G.G.; Fleischmann, R.<br>rdson, D.; Dodson, R.; Khalak, H.G.; Glodek, A.; McKen<br>M.D.; Weidman, J.M.; Fujii, C.; Bowman, C.; Watthey, | RESULT 15 F64671 conserved hypothetical protein HP1214 - Helicobacter pylori (strain 26695) C;Species: Helicobacter pylori C;Date: 09-Aug-1997 #sequence_revision 09-Aug-1997 #text_change 09-Jul-2004 | 423 QMILKEQYDGVIWLE 437 | 642 RPADQFDAMIHID 654 | :      :    :    :    : |   | 534 EVWADGQLTLGQIVRERYGDESRSIGFSTYTGTVTAASEWGGIAQRKAVRPAL 586  : | 270 KLEEYPENIEDFSFFWRDRWMAEGFQWVADTLYPKKKIIVWGHNYHLRKQNTKMI 324 | HMAQTLGSLLTHLDRHLDAPPARIVVWAHNSH | -QKKEKLVKNYQKLIKFTKTHASELKENLPKEPKAYEMFMHSLQLRIDVMETYMLEEMKE | VDPEK | r | 109DTNA-SYLNMDQLTPKSTMKNSIYAVWHTEDVVELFDYMKEQKEKGDPLILTGF 161 | 320 GLGEDTNADEALSGFERFÞAWMWRNTVVRDFVEWLRTRNQRYESG-ALRQAGFYG 373 | 59 LKKYLKGKRIVQLGETTHGAGEINATKVRMIKYLHEELGYDVLAFESGFP 108 | 260 LAELVGDARIVLIGESSHGTHEFYQARAAMTQWLIEEKGFGAVAAEADWPDAYRVNRYVR 319 | Match 4.5%; Score 159; DB 2; Length 446; Local Similarity 21.1%; Pred. No. 0.0092; Les 92; Conservative 73; Mismatches 174; Indels 96; Gaps 20; |

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127 LSHIYQYRKGNAIKSLKDKNIFIVDRGIETGFRAGLGVQTCLKKECQDIYILTPIVAQNV 186
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DVLRRVAIDAPGGVPTHEVLAELVGDARIVLIGESSHGTHEFYQARAAMTQWLIEEKGFG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       681 AA;
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99.9%;
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       Actinobacteridae; Actinomycetales;
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Pred. No. 3e-206;
1; Mismatches
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AG Garnier T., Eiglmeier K., Camus J.-C., Medina N., Mansoor H.,
AR Pryor M., Duthoy S., Grondin S., Lacroix C., Monsempe C., Simon S.,
AR Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler P.R.
AR Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler P.R.
AR Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler P.R.
AR Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler P.R.
AR Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler P.R.
AR Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler P.R.
AR Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler P.R.
AR Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler P.R.
AR Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler P.R.
AR GO; GO:0016789; F. Harsiferase activity, transferring glycosyl. ..;
AR GO; GO:0016789; F. Harsiferase activity, transferring glycosyl. ..;
AR GO; GO:0016789; F. Harsiferase activity, transferring glycosyl. ..;
AR GO; GO:0016789; F. Harsiferase activity, transferring glycosyl. ..;
AR GO; GO:0016789; F. Harsiferase activity, transferring glycosyl. ..;
AR GO; GO:0016789; F. Harsiferase activity, transferring glycosyl. ..;
AR GO; GO:0006166; P. Huncheside metabolism; IEA.
BR GO; GO:0046677; P. Harsiferase L., Harsiferase L., Harsiferase L., Popolise L., Propolise L., Prop
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Best Local (
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Transferase.
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                                             LTLGQIVRERYGDESRSIGFSTYTGTVTAASEWGGIAQRKAVRPALH
                                                                                                           MFSGRVTSWNLRDQHMAQTLGSLLTHLDRHLDAPPARIVVWAHNSHVGDARATEVWADGQ
                                                                                                                                                                              FAAAFGAGPSCEREAVEQLVDVQRNALAYARQDGLLAEDELFYAQQNAQTVRDAEVYYRA
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                                                                                         MFSGRVTSWNLRDQHMAQTLGSLLTHLDRHLDAPPARIVVWAHNSHVGDARATEVWADGQ
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99.8%;
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Pred. No. 1e-176;
1; Mismatches 0;
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606; 0

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300

240 240 180 120 120 60

480 480 420 420 360 360

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Q50822 M
AC Q50822;
DT 01-NOV-1
DT 01-UV-1
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DT 01-UV-2
DE DNA sequ
OS Mycobact
OC Hacteria
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OC Coryneba
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OX NCBI Tax
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DR STRAIN=E
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DR GO; GO:0
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        D 050819 MYCTU PRELIMINARY; PRT; 385 AA.

C 050819;
C 050819;
O1-NOV-1996 (TrEMBLrel. 01, Created)
O1-NOV-1996 (TrEMBLrel. 24, Last sequence update)
O1-VIN-2003 (TrEMBLrel. 24, Last annotation update)
DIA sequence, complete cds.
B DIA sequence, complete cds.
IS Mycobacterium tuberculosis.
C Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
C Corynebacteriumeae; Mycobacteriaee; Mycobacterium;
C Mycobacterium tuberculosis complex.
N CBI TaxID=1773;
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
DNA sequence, complete cds.
Mycobacterium tuberculosis.
Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterines; Mycobacteriaceae; Mycobacterium;
Mycobacterium tuberculosis complex.
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01-NOV-1996 (TrEMBLrel.
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PF05139; Erythro esteras; 1.
NCE 390 AA; 43843 MW; D9B8D21
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97.7%;
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Pred. No. 9.2e
2; Mismatches
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1.2e-113;
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Best Local Similarity
Matches 306; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "The genome sequence of an anaerobic aromatic-d bacterium, strain BbN1.";
Arch. Microbiol. 183:27-36 (2005).

EMBL; CRES5306; CA109813.1; -; Genomic_DNA.
GO; GO:0016789; F:carboxylic ester hydrolase ac
GO; GO:0046677; P:response to antibiotic; IBA.
InterPro, IPR007815; Erythro_esteras; 1.
Complete proteome; Hypothetical protein.
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QSNYQ1;
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01-FEB-2005 (TrEMBLrel. 29, C
01-FEB-2005 (TrEMBLrel. 29, L
01-FEB-2005 (TrEMBLrel. 29, L
Hypothetical protein.
  Complete
SEQUENCE
                                                                                                   PubMed=15551059; DOI=10.1007/800203-004-0742-9; Rabus R., Kube M., Heider J., Beck A., Heitmann Reinhardt R.;
                                                                                                                                                              Rhodocyclaceae; Azoarcus.
NCBI_TaxID=76114;
                                                                                                                                                                                               OrderedLocusNames=AZOSEA36880;
Azoarcus sp. (strain EbN1).
                                                                                                                                      STRAIN=EbN1;
                                                                                                                                             NUCLEOTIDE SEQUENCE.
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Pred. No. 5.3e-86;
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  D8D7218A9FBFF77A
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13-SEP-2005
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     EMBL; AAJ
                                                                                                                                                                                                                                                                                                                                                          US DOE Joint Genome Institute (JGI-PGF);
Copeland A., Lucas S., Lapidus A., Barry K., Detter C.,
Hammon N., Israni S., Pitluck S., Richardson P.;
"Sequencing of the draft genome assembly of Deinococcus
DSM 11300.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q4H7U3
Q4H7U3
                                                                        Submitted (JUN-2005) to the EMBL/GenBank/DDBJ databases -!- CAUTION: The sequence shown here is derived from an EMBL/GenBank/DDBJ whole genome shotgun (WGS) entry v
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STRAIN=DSM 11300;
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Bacteria; Deinococcus-Thermus; Deir
Deinococcaceae; Deinococcus.
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                                                                                                                                                                                                                                                          STRAIN=DSM 11300;
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     EAL82343.1;
50995 MW; (
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     -; Genomic DNA.
6E3EEFE136D64750
                                                                                                                                                                                 assembly
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Query Match
Best Local Similarity
                               PLEVTS-RWIAGENPETYPTG
                                                                                                          TLGQIVRERYGDESRSIGFSTYTGTVTAASEWGGIAQRKAVRPALHGSVEELFHQTAD-S
                                                                                                                                                                                                                                                                                                                                                                      AAFGAGPSCEREAVEQLVDVQRNALAYARQDGLLAEDELFYAQQNAQTVRDAEVYYRAMF
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                                                                                                                                                                    NVGQLARERWPGETFIVGQSTHHGTVTAADDWDEPARVARVRPALPGSVEDLLHEVGEAA
                                                                                                                                                                                                                                                         RGRDESWSLRDAHMAETLEALVEHGER - - QGRPQKIVVWAHNSHLGDARASEMGWLRGEL
                                                                                                                                                                                                                                                                                   SGRVTSWNLRDQHMAQTLGSLLTHLDRHLDAPPARIVVWAHNSHVGDARATEV-WADGQL
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PLDATAGTEPEGEVPDTFPTG
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53.1%;
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Q89L97 BRAJA PRELIMINARY;
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Sasamoto S., Watanabe A., Idesawa K., Iriguchi M., Ka
Kohara M., Matsumoto M., Shimpo S., Tsuruoka H., Wada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bradyrhizobium japonicum.
Bacteria; Proteobacteria; Alphaproteobacteria;
Bradyrhizobiaceae; Bradyrhizobium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-JUN-2003 (TrEMBLrel. 24, Created)
01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
                                                                                                                                                                                                                                                                        "Complete genomic sequence of nitrogen-fixing symbiotic bacterium Bradyrhizobium japonicum USDA110."; DNA Res. 9:189-197(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OrderedLocusNames=bll4651;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=22484998; PubMed=12597275;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN=USDA 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Protein-L-isoaspartate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUCLEOTIDE SEQUENCE.
            CATALYTIC ACTIVITY: S-adenosyl-L-methionine isoaspartate = S-adenosyl-L-homocysteine + F alpha-methyl ester: SUBCELLULAR LOCATION: Cytoplasmic (By similal; BA000040; BAC49916.1; -; Genomic_DNA.
                                                                                                                                      residues in peptides and proteins that result from spontaneous decomposition of normal L-aspartyl and L-asparaginyl residues. plays a role in the repair and/or degradation of damaged proteins similarity).
BA000040; BA
Q8TZR3; 1JG1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                O-methyltransferase.
                                                 Cytoplasmic (By similarity).
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                                                                                                  protein
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                                                                                                                          protein
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ıda T., Yamada
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RESULT
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DT 05
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Best Local S
Matches 259
JLT 8

168 RHISN

QGW168 RHISN

QGW168;

Q6W168;

05-JUL-2004 ('05-JUL-2004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR007815; Erythro_esteras.
InterPro; IPR000682; PCMT.
InterPro; IPR000651; SAM_bd.
Pfam; PF05139; Erythro_esteras; 1.
Pfam; PF05139; PCMT; 1.
Pfam; PF01135; PCMT; 1.
PTIGRFAMs; TIGR00080; pimt; 1.
PROSITE; PS01279; PCMT; 1.
Complete proteome; Methyltransferase; Transferase.
SEQUENCE 679 AA; 75244 MW; AF5EBB2707429538 CRC64;
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GO:0046677; P:response to antibiotic; IEA.
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InterPro; IPR0001737; RRN
InterPro; IPR0001751; SAM
Pfam; PF05139; Erythro_e
Pfam; PF05139; PCMT; 1.
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GO; GO:0016789; F:carboxylic ester hydrolase activity; IEA.
GO; GO:0004719; F:protein-L-ideaspartate (D-aspartate) O-met
GO; GO:0000179; F:rRNA (adenine-N6, N6-)-dimethyltransferase
GO; GO:0008649; F:rRNA methyltransferase activity; IEA.
GO; GO:0016740; F:transferase activity; IEA.
GO; GO:0006464; P:protein modification; IEA.
GO; GO:0046677; P:response to antibiotic; IEA.
GO; GO:0006154; P:rRNA modification; IEA.
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Protein-L-isoaspartate O-methyltransferase (EC 2.1.1.77).
ORFMames-RNGR00375;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Methyltransferase; Plasmid; Transferase.
SEQUENCE 653 AA; 72564 MW; E2BFF829C764E511 CRC64;
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SUBCELLULAR LOCATION: Cytoplasmic (By similarity)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mitted (JUN-2003) to the EMBL/GenBank/DDBJ databases. FUNCTION: Catalyzes the methyl esterification of L-isoaspartyl residues in peptides and proteins that result from spontaneous decomposition of normal L-aspartyl and L-asparaginyl residues. plays a role in the repair and/or degradation of damaged proteingly similarity).

(By similarity).

CATALYTIC ACTIVITY: S-adenosyl-L-methionine + protein L-
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                                                                                                                                                                     ADVLRRVAIDAPGGVPTHEVLAELVGDARIVLIGESSHGTHEFYQARAAMTQWLIEEKGF
                                                                                                                                                                                                                                                                                                                                                                        VGRQEQAQRLLR---
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                                                                                                                            ADDLPLVT--DPGFADPFERFAR----HRIVLLGEATHGTSEFYQARAVITQRLIERHGF
                                                                                                                                                                                                                                                                                                        TCREFAGLVDDVVCATMPTPFLAVGESFWDFRQVTDEEVRRLLATPTAGPSLRRPAASTA
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Pred. No. 7.3e-48;
         TREAASGEPPFORFPAMMWRNAEFAAFVSWLKT
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   EMBL; AL591985; CAC48488.1; -; Genomic_DNA.

R PIR; H95852; H95852;
R HSSP; Q8TZR3; JJG1.

R GO; GO:0016789; F:carboxylic ester hydrolase activity; IE;
R GO; GO:0016789; F:protein-L-isoaspartate (D-aspartate) O-1
R GO; GO:0006464; P:protein modification; IEA.
R GO; GO:0046677; P:response to antibiotic; IEA.
R GO; GO:0046677; P:response to antibiotic; IEA.
R InterPro; IPR007815; Erythro_esteras.
R InterPro; IPR000081; Eythro_esteras.
R InterPro; IPR000081; SAM bd.
R Pfam; PF01135; PCMT; 1.
R Pfam; PF01135; PCMT; 1.
R PTGRPAMB; TIGR00080; pimt; 1.
R PROSITE; PS01279; PCMT; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    O72X74 RHIME PRELIMINARY; PRT; 658 AA. 092X74; O92X74; O92X74; O91-DEC-2001 (TrEMBLrel. 19, Created) O1-DEC-2001 (TrEMBLrel. 19, Last sequence update) O1-MAR-2004 (TrEMBLrel. 26, Last annotation update) Protein-L-isoaspartate O-methyltransferase. OrderedLocusNames=RB0088; ORFNames=SM520088;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=21396508; PubMed=11481431; Finan T.M., Weldner S., Wong K., Bu Vorhoelter F.J., Hernandez-Lucas I. Golding B., Puehler A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=382;
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FUNCTION: Catalyzes the methyl esterification of L-isoaspartyl residues in peptides and proteins that result from spontaneous decomposition of normal L-aspartyl and L-asparaginyl residues. plays a role in the repair and/or degradation of damaged protein (By similarity).

CATALYTIC ACTIVITY: S-adenosyl-L-methionine + protein L-CATALYTIC ACTIVITY: S-adenosyl-L-methionine + protein L-
                                                                                                                                                                                                                                                                                                                                                             alpha-methyl ester.
SUBCELLULAR LOCATION: Cytoplasmic
L; AL591985; CAC48488.1; -; Genomic
; H95852; H95852;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  isoaspartate = S-adenosyl-L-homocysteine
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ETRAVSPLPVTAG--SGHVPDTFPFGL
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Buhrmester J., Chain P.,
I., Becker A., Cowie A., Gouz
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                                                                   NUCLEOTIDE
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Collingro

Schmitz-

Esser

C.L.,

Purkhold

9

SEQUENCE

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GENOMIC . .

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sp.). ; Parachlamydia.

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DGFVWFDQTTPVEPL--GAQHIKAGVPDTFPFGL
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                                                                        VMHDSGVGCFLIDFARHARLRDGLLKPL----LERFIGV
                                                                                                                                           DMGMAREELNIGQLCRERFGDQAALIGFGTHGGHVAAASDWNGDMEVKPIRPSLEGSYER
                                                                                                                                                                                                                   AERYYRIMYYAGADSWNMRDTHMFETLEHLL----
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1; Mismatches 269
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"Illuminating the evolutionary history of chlam Science 304:728-730(2004).

EMBL; BX908798; CAP23575.1; -; Genomic DNA. GO; GO:0016789; F:carboxylic ester hydrolase ac GO; GO:0046677; P:response to antibiotic; IEA. Interpro; ITP007815; Erythro-esteras.

Pfam; PP05139; Erythro-esteras; 1.
Complete proteome; Hypothetical protein.
SEQUENCE 456 AA; 51894 MW; P60D4CA9131C04E3
                                                                                                                                                                                                                                                                 QBBHX2 PSEPK PRELIMINARY;
QB8HX2;
Q1-UU1-2003 (TrEMBLrel. 24, C
01-UUN-2003 (TrEMBLrel. 24, L
01-CCT-2003 (TrEMBLrel. 25, L
Conserved domain protein.
MEDLINE=22423060; PubMed=12534463;

DOI=10.1046/j.1462-2920.2002.00366.x;

Nelson K.E., Weinel C., Paulsen I.T., Dodson R.J., Hilbert H.,

Martine dos Santos V.A.P., Fouts D.B., Gill S.R., Pop M., Holmes

Brinkac L.M., Beanan M.J., DeBoy R.T., Daugherty S.C., Kolonay J.

Madupu R., Nelson W.C., White O., Peterson J.D., Khouri H.M.,

Hance I., Chris Lee P., Holmes E.K., Scanlan D., Tran K.,

Moazzez A., Utterback T.R., Rizzo M., Lee K., Kosack D., Moestl

Moazzez A., Utterback T.R., Rizzo M., Lee K., Kosack D., Moestl
                                                                                                                                                                                                                                  OrderedLocusNames=PP3231;
Pseudomonas putida (strain KT2440).
                                                                                                                                                                                NCBI_TaxID=160488;
                                                                                                                                                                                                   Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadaceae; Pseudomonas.
                                                                                                                                                   NUCLEOTIDE SEQUENCE
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RASULT 12
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Matches 194
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Q4IWA2;
13-SEP-2005 (TremBLrel. 31, C
13-SEP-2005 (TremBLrel. 31, L
13-SEP-2005 (TremBLrel. 31, L
                               STRAIN-AvOP;
US DOE Joint Genome Institute (JGI-PGF);
Copeland A., Lucas S., Lapidus A., Barry K., Detter C.,
Hammon N., Israni S., Pitluck S., Richardson P.;
"Sequencing of the draft genome assembly of Azotobacter
                                                                                                                                                                                                                                                                                    ORFNames=AvinDRAFT_2888;
Azotobacter vinelandii A
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metabolically versatile Pseudomonas
Environ. Microbiol. 4:799-808(2002)
                                                                                                                                                                                                        Bacteria; Proteobacteria; Gamm
Pseudomonadaceae; Azotobacter.
NCBI TaxID=322710;
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       Submitted (JUN-2005)
                             "Sequencing AvOP.";
                                                                                                                                                                   NUCLEOTIDE
                                                                                                                                                                                                                                                                                                                                     Erythromycin esterase
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larity 42.9%;
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Q5B5S5;
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10-MAY-2005 (
                 Hypothetical protein. ORFNames=AN4105.2;
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Copeland A., Lucas S., Lapidus A., Barry K., Detter C.,
Hammon N., Israni S., Pitluck S., Richardson P.;
Submitted (JUN-2005) to the EMBL/GenBank/DDBJ databases.
-I- CAUTION: The sequence shown here is derived from an
EMBL/GenBank/DDBJ whole genome shotgun (WGS) entry w
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NUCLEOTIDE SEQUENCE
STRAIN=AVOP;
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                                                                                                                                 EMENI
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                                                                                                                                                                                                                                                                                                                                  RAVVWAHNSHIGNADATAMGWA-GEFNIGELCRTAWGRDAVLIGMGTDRGEVACASEWDE
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   nidulans
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Pred. No. 9.3e-42
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DFE648ACF0E73370
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                                                 sequence update) annotation updat
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RA Arachchi H.M., Barna N., Bastien V., Bloom T., Boguslavkiy L.,
RA Boukhgalter B., Butler J., Calvo S.E., Camarata J., Chang J.,
RA Boukhgalter B., Butler J., Calvo S.E., Camarata J., Chang J.,
RA Choepel Y., Collymore A., Cook A., Cooke P., Corum B., DeArellano K.,
RA Diaz J.S., Dodge S., Dooley K., Dorris L., Elkins T., Engels R.,
RA Diaz J.S., Gnerre S., Graham L., Grand-Pierre N., Hafez N.,
RA Gardyna S., Gnerre S., Graham L., Grand-Pierre N., Hafez N.,
RA Gardyna S., Gnerre S., Graham L., Grand-Pierre N., Hafez N.,
RA Hagopian D., Hagos B., Hall J., Horton L., Hulme W., Iliev I.,
RA Hagopian D., Hagos B., Hall J., Horton L., Hulme W., Iliev I.,
RA Kells C., Landers T., Levine R., Lindblad-Toh K., Liu G., Lui A.,
RA Kells C., Landers T., Levine R., Lindblad-Toh K., Liu G., Lui A.,
RA Matthews C., Maccleil E., McCarthy M., Meldrim J., Meneus L.,
RA Mihova T., Melnga V., Murphy T., Naylor J., Nguyen C., Nicol R.,
RA Nielsen C.B., Norbu C., O'Connor T., O'Donnell P., O'Neil D.,
RA Nielsen C.B., Norbu C., O'Connor T., O'Donnell P., O'Neil D.,
RA Rachnyka A., Ramasamy U., Raymond C., Retta R., Rise C., Rogov P.,
RA Roman J., Schauer S., Schupback R., Seaman S., Severy P., Smirnov S.,
RA Ramasamy U., Raymond C., Retta R., Rise C., Rogov P.,
RA Ramasamy U., Raymond C., Retta R., Rise C., Rogov P.,
RA Talamas J., Tesfaye S., Theodore J., Topham K., Travers M.,
RA Vassiliev H., Venkataraman V.S., Viel R., Vo A., Wang S., Wilson B.,
RA Lander E.:
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Best Local 9
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Lander E.;
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Eurotiales; Trichocomaceae; Emericella.
NCBI_TaxID=227321;
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                    ALGDEETYPFGL
                                                    AGENPETYPTGL
                                                                                   REALAKEHRRLORFIGVIYRPDTERISHYSAADLVNOFDGYVWFDTTSAVRPLEVVQPKT
                                                                                                                  EAPL--DVVRLGRAIGVVYLPATERQSHYLHVRPADQFDAMIHIDQTRALEPLEVTSRWI
                                                                                                                                                  ALIGCGTHTGTVAAASEWGEDMQIMDVKPSSRDSWERIAHDTGVESFLLDLREDRMSREV
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Pred. No. 9.5e-42;
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Mismatches

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Length Indels

Genomic\_DNA.

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RESULT 14
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RA Arroya J., Berriman M., Abe K., Archer D.B., Jermejo C., Bennett J.,
RA Bowyer P., Chen D., Collins M., Coulsen R., Davies R., Dyer P.S.,
RA Bowyer P., Chen D., Collins M., Coulsen R., Davies R., Dyer P.S.,
RA Bowyer P., Chen D., Collins M., Coulsen R., Davies R., Dyer P.S.,
RA Goldman G.H., Gomi K., Griffith-Jones S., Gwilliam T.V., Fischer R.,
RA Goldman G.H., Gomi K., Griffith-Jones S., Gwilliam R., Haas B.,
RA Goldman G.H., Khouri H., Kitamoto K., Kobayashi T., Kulkarni R.,
RA Keller N., Khouri H., Kitamoto K., Kobayashi T., Kulkarni R.,
RA Kunagai T., Lafton A., Latge J.-P., Li W., Lord A., Lu C.,
RA Kunagai T., Lafton A., Latge J.-P., Li W., Lord A., Lu C.,
RA Majoros W.H., May G.S., Miller B.L., Mohamoud Y., Molina M., Monod M.,
RA Mouyna I., Mulligan S., Murphy L., O'Neil S., Paulsen I.,
RA Penalva M.A., Pertea M., Price C., Pritchard B.L., Quail M.A.,
RA Rabbinowitsch E., Rawlins N., Rajandream M.-A., Reichard U.,
RA Renauld H., Robson G.D., Rodriguez de Cordoba S., Rodriguez-Pena J.M.,
RA Rabinowitsch E., Rawlins N., Rajandream M.-A., Reichard U.,
RA Romning C.M., Rutter S., Salzberg S.L., Sanchez M.,
RA Roming C.M., Rodriguez Ge Cordoba S., Rodriguez-Pena J.M.,
RA Romind C.M., Rodriguez Ge Cordoba S., Rodriguez-Pena J.M.,
RA Romonic G.M., Rodriguez Ge Cordoba S., Rodriguez-Pena J.M.,
RA Takeuchi M., Tekaia F., Turner G., Vazquez de Aldana C.R., Weidman J.,
RA White O., Woodward J., Yu J.-H., Fraser C., Galagan J.E., Asai K.,
RG Machida M., Hall N., Barrell B., Denning D.W.;
RT "Genomic Sequence of the pathogenic and allergenic filamentous fungus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local 9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Aspergillus Mumigatus.";
Submitted (MAY-2005) to the EMBL/GenBank/DDBJ databases
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13-SEP-2005 (TrEMBLrel. 31, Last sequence up
13-SEP-2005 (TrEMBLrel. 31, Last annotation
Erythromycin esterase family protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q4WJI5_ASPFU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN=Af293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=330879;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eurotiales; Trichocomaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Aspergillus fumigatus Af293.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORFNames=Afulg05850;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q4WJI5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAUTION: The sequence shown here is derived EMBL/GenBank/DDBJ whole genome shotgun (WGS) preliminary data.

L; AAHF01000007; EAL88297.1; -; Genomic_DNA.
                                                                                                                                                                                                                                                                                     184
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                                                            WAHNSHVGDARATEVWA-DGQLTLGQIVRERYGDESRSI-GFSTYTGTVTAASEWGGIAQ 578
                                                                                                                                                                                                                                                                                                                       RARYACFDHACADDGQAYGFAAAFGAGPSCEREAVEQLVDVQRNALAYARQDGLLAEDEL 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WRNTVVRDFVEWLRTRNQRYESGALRQAGFYGLDLYSLHRSIQEVISYLDKVDPRAAARA 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MTQWLIEEKGFGAVAAEADWPDAYRVNRYVR-----GLGEDTNADEALSGFERFPAWM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SLRRPAASTAADVLRRVAIDAPG-GVPTHEVLAELVGDARIVLIGESSHGTHEFYQARAA
                                                                                                                                                                                                          FYA-QQNAQTVRDAEVYYRAMFSGRVTSWNLRDQHMAQTLGSLLTHLDRHLDAPPARIVV
                                                                                                                                                                                                                                                                                     RRRYGCL-QPWVDEPSAYGLASLRGM-EDCESGVLQMLRDLLDKRLQYAQHD--VRDGEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ITKRLIEQHGYTMVALEADWPDAEAIDRYVRQRPGPKAGIG---GKARDLEPFKRFPTWM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SSRRPMMAQLQQLFTEAAQPLPPISDPSFGSHFDNFGNYKVVLLGDGSHGTSEFYAARAE
WAHNSHCGDARYTSMGTRRNEVNIGQLIRENFGRENVAILGCGTHTGTVAAAHEWDDDMQ
                                                                                                                                                                                                                                                                                                                                                                                                                                    WRNREMQDLVEWMRNRNAKLPNE--KKAGVYGLDLYSMGASIRAVIDYLDRVDPPAGKEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       463 AA;
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Pred. No. 1.8e-41;
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RA Arachchi H.M., Barna N., Bastien V., Bloom T., Boguslavkiy L.,
RA Boukhgalter B., Butler J., Calvo S.E., Camarata J., Chang J.,
RA Choepel Y., Collymore A., Cook P., Cooke P., Corum B., DeArellano K.,
RA Choepel Y., Collymore A., Cook A., Cooke P., Corum B., DeArellano K.,
RA Diaz J.S., Dodge S., Dooley K., Dorris L., Elkins T., Engels R.,
RA Brickson J., Faro S., Ferreira P., FitzGerald M., Gage D., Galagan J.,
RA Gardyna S., Gnerre S., Graham L., Grand-Pierre N., Hafez N.,
RA Hagopian D., Hagos B., Hall J., Horton L., Hulme W., Iliev I.,
RA Hagopian D., Hagos B., Hall J., Horton L., Hulme W., Iliev I.,
RA Hagopian C., Johnson R., Jones C., Kamal M., Kamat A., Karatas A.,
RA Kells C., Landers T., Levine R., Lindblad-Toh K., Liu G., Lui A.,
RA Kells C., Landers T., Levine R., Lindblad-Toh K., Liu G., Lui A.,
RA Ma L.-J., Mabbitt R., MacLean C., Macdonald P., Major J., Manning J.,
RA Matthews C., Mauchy T., Naylor J., Nguyen C., Nicol R.,
RA Mihova T., Menega V., Murphy T., Naylor J., Nguyen C., Nicol R.,
RA Milson T., Peterson K., Phunkhang P., Pierre N., Purcell S.,
RA Nielsen C.B., Norbu C., O'Connor T., O'Donnell P., O'Neil D.,
RA Rochupka A., Ramasamy U., Raymond C., Retta R., Rise C., Rogov P.,
RA Rohupka A., Ramasamy U., Raymond C., Retta R., Rise C., Rogov P.,
RA Rohupka A., Ramasamy U., Raymond C., Retta R., Rise C., Rogov P.,
RA Rohupka A., Ramasamy U., Raymond C., Topham K., Travers M.,
RA Talamas J., Tesfaye S., Theodore J., Topham K., Travers M.,
RA Nielsen C., Young G., Zainoun J., Zembek L., Zimmer A., Zody M.,
RA Lander R., Schupha G., Zainoun J., Zembek L., Zimmer A., Zody M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
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Best Local
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13_GIBZE
Q4I713_C
Q4I713;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AACM01000289; EAA76190.1; -; Genomic_DNA.
Hypothetical protein.
SEQUENCE 455 AA; 51820 MW; C3148AAE899A6D7F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Fusarium graminearum genome sequence.";
Submitted (FEB-2004) to the EMBL/GenBank/DDBJ databases.
-!- CAUTION: The sequence shown here is derived from an EMBL/GenBank/DDBJ whole genome shotgun (WGS) entry w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gibberella zeae PH-1.

Bukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes;
Hypocreomycetidae; Hypocreales; Nectriaceae; Gibberella.
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13-SEP-2005 (TrEMBLrel.
13-SEP-2005 (TrEMBLrel.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                            GQGAVETTQMAEKEKRESPFLRFPTWMWRNVEVHDFVEWMRS----YNSGREVTEAAGFY
                                                                                                                                                                                                                                                                                                      --GLGEDT----NADEALSGFERFPAWMWRNTVVRDFVEWLRTRNQRYESG--ALRQAGFY
                                                                                                                                                                                                                                                                                                                                                                                                                                                 GDARIVLIGESSHGTHEFYQARAAMTQWLIEEKGFGAVAAEADWPDAYRVNRYVR-----
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   EREAVEQLVDVQRNALAY-ARQDGLLAEDELFYAQQNAQTVRDAEVYYRAMFSGRVTSWN
                                                                                 GLDLYSMGTSMKAVIDYLDTVDKDMAKVARGRYINLMD--WLEDPHEYGLESLATSFKGY
                                                                                                                                               GLDLYSLHRSIQEVISYLDKVDPRAAARARARYA-CFDHACADDGQAYGFAAAFGAGPSC
                                                                                                                                                                                                                                                                                                                                                                               GDCKVLLIGDASHGTSEFYSVRAEITKYMIENHGFNIVAVEADWSDAEHVDRYVRHRPVP
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2; Mismatches
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Db 208 EQDVVAMIGDILERRIEYSAALDGGV---EFHNGEQNARVYKDAEQYYKAMYRGQDKSWN 264

Qy 491 LEDQHMAQTIGSLITHLDRHLDAPPARIVVWAHNSHVGDARATEV-WADGQLTIGGIVRE 549

Db 265 HEDMHMFETLKRVLEH-----RGEGSKAIVWAHNSHVGDARATEV-WADGQLTIGGIVRE 549

QY 550 RYGDESRSIGFSTYTGTVAASEWGGIAQRKAVRPALHGSVELFHQTA DSFLVSARLS

Db 320 AFGDHALSIGTGTVTGTVAAAQNWESDMNIIKVQPGLPGSYEELHHATGIGNFVLDLRKG 379

QY 609 RDAEAPLDVV---RIGRAIGVVYLPATERQSHYLHVRPADQFDAMIHIDQTRALEPLEVT 665

Db 380 KCDEKLREALRGERLERSIGVIYKPETEKASHYSYAILPDQFDGYIWFDESKHVGTLEIH 439

QY 666 SRWIAGENPETYPTGL 681

Db 440 QPRSPLEYHETWPPGL 455

Search completed: March 23, 2006, 05:24:20
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| RESULT 1 US-09-90 ; Sequent ; Patent ; GENERA ; APPL:   |            | 45                | 44                   | 43                   | 42                   | 41                | 40                   | 39                   | 38               | 37               | 36                   | 35                  | 34                  | υ<br>u              | 32              | 31              | 30              | 29                | 28                |  |
|---|------------|-------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|------------------|------------------|----------------------|---------------------|---------------------|---------------------|-----------------|-----------------|-----------------|-------------------|-------------------|--|
| RESULT 1 US-09-902-540-10451 Sequence 10451, Appl Patent No. 6833447 GENERAL INFORMATION: APPLICANT: GOldman, APPLICANT: Hinkle,                                  |            | 121               | 122                  | 122                  | 122                  | 123               | 123                  | 123                  | 124              | 124              | 124.5                | 125                 | 125.5               | 126                 | 126.5           | 126.5           | 126.5           | 126.5             | 126.5             |  |
| 10451<br>[51, Appli<br>[833447]<br>DRMATION:<br>Goldman,  |            | 3.4               | 3<br>.5              | ა<br>ა               | 3.<br>5              |                   | 3.5                  |                      |                  |                  | ω<br>.5              | 3.6                 | 3.6                 | 3.6                 | 3.6             | 3.6             | 3.6             |                   | 3.6               |  |
| cation US/  |            | 1891              | 831                  | 765                  | 729                  | 4472              | 879                  | 579                  | 1939             | 1875             | 2108                 | 852                 | 1053                | 577                 | 11877           | 3739            | 3739            | 3739              | 3739              |  |
| n US  |            | ۲                 | N                    | N                    | ຎ                    | ب                 | N                    | N                    | N                | N                | N                    | N                   | N                   | N                   | N               | N               | N               | N                 | 2                 |  |
| SULT 1 -09-902-540-10451 Sequence 10451, Application US/09902540 PATENT NO. 683347 GENERAL INFORMATION: APPLICANT: Goldman, Barry S. APPLICANT: Hikle, Gregory J. | ALIGNMENTS | US-08-804-227C-12 | US-09-252-991A-30097 | US-09-252-991A-19778 | US-09-252-991A-32535 | US-08-804-227C-2  | US-09-252-991A-22604 | US-09-252-991A-27857 | US-10-152-886-43 | US-10-042-665A-2 | US-09-252-991A-31502 | US-09-902-540-13582 | US-09-902-540-12126 | US-09-902-540-14076 | US-09-105-537-6 | US-09-793-708-2 | US-09-657-440-2 | US-09-141-908-3   | US-09-105-537-33  |  |
|   |            | Sequence 12, Appl | 300                  |                      |                      | Sequence 2, Appli | Sequence 22604, A    |                      | 43               |                  | 3                    |                     |                     | 14(                 | φ,              | ν,              | 2               | Sequence 3, Appli | Sequence 33, Appl |  |

## APPLICANT: Hinkle, Gregory J. APPLICANT: Slater, Steven C. APPLICANT: Wiegand, Roger C. FITTLE OF INVENTION: Myxococcus xanthus Genome Second Research File Reference: 38-10(15849)B CURRENT APPLICATION NUMBER: US/09/902,540 CURRENT FILING DATE: 2001-07-10 PRIOR APPLICATION NUMBER: 60/217,883 PRIOR APPLICATION NUMBER: 60/217,883 PRIOR FILING DATE: 2000-07-10 NUMBER OF SEQ ID NOS: 16825 SEQ ID NO 10451 LENGTH: 226 S 밁 δ 문 5 밁 ; TYPE: PRT ; ORGANISM: Myxococcus xanthus US-09-902-540-10451 Matches Query Match Best Local ( Local Similarity nes 118; Conserv 180 192 VCATMPTPFLAVGESFWDFRQVTDEEVRRLLATPTAGPSLRRPAASTA 239 120 132 PPTDITGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPESTCREFAGLVDDV 191 60 72 KLGAPGHDEFAVGALASGGRVVVNDDVVRGLRITPQQLRDIAEREGRELLRRESAYRGER 131 12 N RSPRRVFRDRREAGRVLAELLAAYRDQPDVIVLGLARGGLPVAWEVAAALHAPLDAFVVR REPE--FODRYEGGRVLADHLRRHAROPGTLVLALPRGGVPVGAEVARKLGVPLDVFLVR PPPNVRGRTVLLVDDGLATGTTMRAAVAALRLLEPAAIIVAVPVAAAESCESLAQVADEV ICVRMPEPFYSVGLWYRDFAQTEDDEVRALLAEAT----KLGTPGHEELAMGAIASGGVRVLNREVVNELNIGREQIEAAARREAVELQRREESYREGR Conservative 15.6%; 30; Score 547.5; Pred. No. 3.5 Mismatches 3.9e-48; 73; Sequences -REGAASEA Indels Length 226; and Uses 7; 59

RESULT 2
US-09-020-540-15374
; Sequence 15374, Application US/09902540
; Patent No. 6833447
; GENERAL INFORMATION:
; APPLICANT: GOIdman, Barry S.
; APPLICANT: Hinkle, Gregory J.

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TITLE OF INVENTION: Wiegand, Roger C.

FILE REFERENCE: 38-10(15849)B

CURRENT APPLICATION NUMBER: US/09/902,540

CURRENT FILING DATE: 2001-07-10

PRIOR APPLICATION NUMBER: 60/217,883

PRIOR FILING DATE: 2000-07-10

NUMBER OF SEQ ID NOS: 16825

SEQ ID NO 15374

LENGTH: 229

TYPE: PRT

OPCANAGE

CORPORATE

LENGTH: 229

TYPE: PRT
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US-08-311-731A-396
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Best Local (
TELEFAX: 617/720-2441
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                           CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: GATES, EDWARD R.
REGISTRATION NUMBER: 31,616
REFERENCE/DOCKET NUMBER: C004
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617/720-3500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
APPLICANT: SMITH, DOUGLAS
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MEDIUM TYPE: Floppy disk
COMPUTER: IEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
ADDRESSEE: WOLF, GREENFIELD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES TITLE OF INVENTION: RELATING TO MYCOBACTERIUM TUBERCULOSITITLE OF INVENTION: DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
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42.5%; Pred. No. 1.2e-34;
tive 39; Mismatches 86
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APPLICANT: Goldman, Barry S.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and Uses Thereof
FILE REFERENCE: 38-10(15849)B
                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQ ID NOS: 16825
SEQ ID NO 12846
                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                    Query Match
Best Local &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 12846, Application US/09902540
Patent No. 6833447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: 60/217,883 PRIOR FILING DATE: 2000-07-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT APPLICATION NUMBER: US/09/902,540 CURRENT FILING DATE: 2001-07-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE: p
HYPOTHETICAL: YE
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 227
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                                                                                                            138 GKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPESTCREFAGLVDDVVCATMP 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               112
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          132 PPTDITGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPESTCREFAGLVDDV 191
                                                                                                                                                                                                                                                  18 FRDRREAGRVLAELLAAYRDQPDVIVLGLARGGLPVAWEVAAALHAPLDAFVVRKLGAPG
                                                                                                                                                 61 R-MTVLGAVSEGGGIYLDQDALRGLGLPEVEARSLARAEASEVDNQVQRLRGTSEPA-MG 118
                                                                                                                                                                                  78 HDEFAVGALASGGRVVVNDDVVRGLRITPQQLRDIAEREGRELLRRESAYRGERPPTDIT 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12 RSPRRVFRDRREAGRVLAELLAAYRDQPDVIVLGLARGGLPVAWEVAAALHAPLDAFVVR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  72 KLGAPGHDEFAVGALASGGRVVVNDDVVRGLRITPQQLRDIAEREGRELLRRESAYRGER 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         53 RNSMRLFDDRVDAGRHLAERLESLRGK-DMVVLGLPRGGVPVAFEVAKALRAPLDVLVVR 111
                                                                                                                                                                                                                                                                                                     84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97;
                                                                                                                                                                                                                                                                                                                      Similarity
PAMRDVSEAYDDYRPLPDVELRQLL
                                  TPFLAVGESFWDFRQVTDEEVRRLL 222
                                                                                                                                                                                                                             FRDRADAGRRLAARLLPYRG-GEVRVLGLARGGLRVAYEVAHALEAPLDVWVSRRIDVPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VCATMPTPFLAVGESFWDFRQVTDEEVRRLL-----
                                                                     VCLHTPAFFCAVGQGYCNFTQTSDAEVIALLDRAREGFGESATTATLGDPQIR 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DRAPIGGRIAVIVDDGIATGATAKASCQVARAQGVSKVVLAVPIGGRDIFARFAGYADEV
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YES
                                                                                                                                                                                                                                                                                                                  9.9%; Score 346.5;
41.0%; Pred. No. 2.8
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 415.5; DB 2;
Pred. No. 2.9e-34;
                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                      .8e-27;
                                                                                                                                                                                                                                                                                                                                      DB 2;
                                                                                                                                                                                                                                                                                                     84;
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                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                        Length 227;
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TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS

TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS

FILE REFERENCE: 107196.136

CURRENT PILING DATE: 1990-02-18

PRIOR APPLICATION NUMBER: US/09/252,991A

CURRENT FILING DATE: 1990-02-18

PRIOR APPLICATION NUMBER: US 60/074,788

PRIOR PILING DATE: 1998-07-18

PRIOR FILING DATE: 1998-07-18

PRIOR FILING DATE: 1998-07-27

NUMBER OF SEQ ID NOS: 33142

SEQ ID NO 21798

LENGTH: 1650

TYPE: PRT

ORGANISM: Pseudomonas aeruginosa
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Best Local Similarity 22.1
Matches 172; Conservative
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                                                                                                                                                                                                                                                                                                                                                                               371
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                                                                                                                                                                                                                                                                                                                                                                                                                        596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541 -----GÉRQAGAGNGAFGVVVQRÁVDAQVDAGAAGQGÁLGÁVVQASGRDVQÁGGAGDHPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481 AQRLLATEGAATVVEVGAADVQHALADQLATLGVVQRASGDAQAGVAGEQALAAVVQGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               375
      847
                                           587 H--GSVEELFHQTADSF----LVSARLSRDAEAPLDVVRLGRAIG-VVYLPATERQSHYL 639
                                                                                      788
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                                                                                                                                                                                                             491
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                                                                                                                                                                                                                                                                                             431
                                                                                                                                                                                                                                                                                                                                                                                                                                                             315 NRYVRGIGEDT----NADEALSGFERFPAWMWRNTVVRDFVEWLRTRNQRYESGALRQAG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  218 VRRLLATPTAGPSLRRPAAS----TAAD-----VLRRVAIDAPGGVPTHEVLAELV-GDA 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    43 VLGLARGGLPVAWEVAAALHAPLDAF-----VVRKLGAPGHDEFAVGA-----LAS 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             h 4.2%; Score 147.5; DB 2; Length 1650; Similarity 22.1%; Pred. No. 3.7e-05; 72; Conservative 75; Mismatches 304; Indels 227;
                                                                                                                                                                                                             LRDQHMAQTLGSLLTH-----LDRH--LDAPPARIVV-----WAHNSHVGDARA 532
                                                                                                                                                                                                                                                                                                                                                                                                                      QAVVQGLGDAQGQAGGADQAPAAVVQAGGGEGEGAVAGDFPAGAVV---HRAELAQQQRAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RIVLIGE----SSHGTHEFYQARAAMTQWLIEEKGFGAVAA------EADWPDAYRV 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QLEALLAGNLAALAVVEDVÕPLDAQRAASTDQATLVVQVAAPQVETDAALADQPALALHQ 434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GSRLV----TVRPWPSGEQAGAGVAQRVG-----VQAQFPGADDAPLLAVVDAPGQ 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGRVVVNDDVVRGLRITPQQLRDIAEREGRELLRRESAYRGERPPTDITGKTVIVVDDGL 148
                                                                                                                             TEVWADGQLTLGQIVRER-----YGDESRSIGFSTYTGTVTAASEWGGIAQRKAVRPAL 586
                                                                                                                                                                                                                                                                                           CEREAVEQLVDVQRNALAYARQDGLLAEDELFYAQQNAQTVRDAEVYYRAMFSGRVTSWN
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    HPLGLVQQALHGEAQAAVADDLAAAVVQLLAGVHGDLRGAGNLAGAVVDLPRLDSDAAIR 906
                                                                                                                                                                    -ADIH--RTLGA--DHAGTAVVEAGALQRHAGIAEQPAALVVQRGLAGQRQRTGAGEGPA
                                                                                                                                                                                                                                                      ----VEQALGADPSLLAVVQPGG-----HQGDAGVAADAAVAAVVQHAG----- 732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----AP----ESTCREFAGLVDDVVCATMPTPFLAVGESFWDFRQVTDEE 217
                                                                                    TVVQARGARRQAAFADQRAALVVQHAAEAHAQAVLAVEPTAVAVEQFAAV-QAQAVAPGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VTSLSPETMPWALSQAGGVH-PLRALADPGALAVVVQRAAEGDGQLAVPCSKGCRRRCCP
                                                                                                                                                                                                                                                                                                                                      -RGDQAAVA----VDQRAAIEVEG-----DAGFADQDAASALVEAFQVG--
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| 1773        | EELAPEPGFAARLTLILPTLEKLPEALAEAVLTQVHAQPGTVRVEALAMAADGWPSRRKS   | Db 1714   |                    |
| 542         | 2 DAPPATEVWADGQLT  | Qy 512  | n                  |
| 1713        | 9 DELFYAQQNAQTVRDABVYYRAMFSGRVTSWNLRUQHMAQTLGSLLTHLURHL  | Qy 45<br>Db 165   | n 0                |
| • •         | LDĹŦĎÀĹÀM  | 161   |                    |
| 458         | CADDGQAYGFAAAFGAGFSCEREAVEQLVDVQRNALAYARQDGLLAE  | Qy 412  | 0                  |
| 411<br>1612 | 2 EWLRTRNORYESGALROAGFYGLDLYSLHRSIQEVISYLDKVDPRAAARARARYACFDHA   | Qy 35<br>Db 156   | <b>п</b> О         |
| 351<br>1565 | 2 WIIEEKGFGAVAABADWPDAYRVNRYVRGIGEDTNADEALGGFERFPAWMMRNTVVRDFV<br>   | Qy 292<br>рь 1510   | н о                |
| un vo       |  | Qy 234<br>Db 1457   | <b>"</b> 0         |
| 1456        | Z KEFAGIVDVVCAIMFIPFLAVGESFWDFKQVIDEEVRKLLAIFIKGESLKK  | Qy 182<br>Db 1422   | u 0                |
| 1421        | TORAAEAAPEDLTALQALVTGLRQRGDSTRLLEALEQWVPR  | 137   |                    |
| 1371        |  | <sub>L</sub>  |                    |
| 121         | 4 PLDAFVVRKLGAPGHDEFAVGALASGGRVVVNDDVVRGLRITPQQLRDIAEREGRELL   | Qy 6  | 0                  |
| 63<br>1324  | 5 AAADVTRRSPRRVFRDRREAGRVLAELLAAYRDQP-DVIVLGLARGGLPVAWEVAAALHA   | Qy 5<br>Db 1278   | п о                |
| 37;         | ch 4.1%; Score 143.5; DB 2; Length 2214;<br>ll Similarity 23.1%; Pred. No. 0.00016;<br>173; Conservative 80; Mismatches 302; Indels 193; Gaps  | Query Match<br>Best Local<br>Matches 17   |                    |
| ""          | -15988 988, Application US/09902540 6833447 ORMATION: Goldman, Barry S. Hinkle, Gregory J. Slater, Steven C. Wiegand, Roger C. Wiegand, Roger C. Wiegand, NUMSER: US/09/902,540 ICATION NUMBER: US/09/902,540 ICATION NUMBER: 60/217,883 NG DATE: 2000-07-10 SEQ ID NOS: 16825 5988 MYXXOCOCCUS Xanthus MYXOCOCCUS Xanthus   | SULT 6 -09-902 Sequence Patenta GENERAL APPLIC APPLIC APPLIC APPLIC CURREN CURREN FILE R CURREN FILOR PRIOR | Cunananananananana |
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US-09-252-991A-26723

Sequence 26723, Appl. Patent No. 6551795
GENERAL INFORMATION:

FILE REFERENCE:

107196.136

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CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR TILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 26723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                      375 DLYSLHRSIQEVISYLDKVDPRAAARARYACFDH------ACADDGQAY--GFAA 423
                                                                                                                                                                                                                                            321 LGEDTNADEAL---SGFER---FPAWMWRNTVVRDFVEWLRTRNQRYESGALRQAGFYGL
                                                                                                                                                                                                                                                                                        357 RQVQL-----TGSVAMARPVVG---VEDECLAAVDGRADRGGSPMCFGVDDAAGGEDRG
                                                                                                                                                                                                                                                                                                                                    268 RIVLIGESSHGTHEFYQARAAMTQWLIEEKGFGAVAAEAD---WPDAYRVNRYV----RG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      271 VGMRQHHRAVDS-RLAQQRGLDVA-----EFDAVAADLHLVVQPT------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       162 E---EAVVQAEVGMPQHFLPGQGHLQFAGGAEA----LLVESFLALFVQVSTQGLAVDLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62 HAPLDAFVVRKLGAP-----GHDBFAVGALASGGRVVVNDDVVRGLRITPQQLR-DIA
                  ADAGHQGGAAPLIHIEAPVVPAHEVGQGATLDHHALGFA--GGARGEDHI 550
                                                              A-----FGAGPSCEREA------VEQLVDVQRNALAYARQDGLLAEDEL 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ----SMFAAVQALRDAQPAQIVIAVPAAPESTCREFAGLVDDVVCATMPTPFLAVGESFW 208
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                                                                                                          -----HHGRREGVA-----DPLIGEECQQRRRVWAHLVGHQVEAGACAQGGPDFPLGNVE
                                                                                                                                                                                                     LGRAVVIHHGIGQPAGCDRRQFFPG---
                                                                                                                                                                                                                                                                                                                                                                                -----EELQAAIGQPA---GLVAGAVEPTPQCLR--VVEAPGGHVRVAQVFAR-QADA
                                                                                                                                                                                                                                                                                                                                                                                                                        DFRQVTDEEVRRLLATPTAGPSLRRPAASTAADVLRRVAIDAPGG-VPTHEVLAELVGDA
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24.9%; Pred. No. 0.00013;
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                                                                                                                                                                                                  ----AEQVAQR-QRRRGGLLRQRGH---
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US-07-689-008-2
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                                                                                                                                                                                                                                                                                                                                                            Matches 152;
                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPHONE: (415) 393-2000
TELEPAX: (415) 393-2266
TELEX: 340817 MACPAG SFO
INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
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APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 3031 amino aci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Murphy, Lisabeth Feix REGISTRATION NUMBER: 31547 TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US 337,194
FILING DATE: 12-APR-1989
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 496,236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: 1: MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 23-MAR-1990
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 1991042:
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: PatentIn Release #1.24
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION:
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OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
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                                                                                        1551
1597 A----TSATAAPRQILLQQARFWLQQQQYDNARQALQNAERIAPNSPDVLEVLGEYQTAI 1652
                                                                                                                                                                                1520 IV------VGLL---GCILIVAVMVRAL-
                                                                                                                                                                                                                                                                   1465 QILAQRKNQAKIQGDLVLAHGDDLTSYRSSPLYTV----GTVPLWLEPDWYMHNHPSRV 1519
                                                                                                                                    129
                                                                                                                                                                                                                       69 VVRKLGAPGHDEFAVGALASGGRVVVNDDVVRGLRITPQQLRDIAEREGRELLRRESAYR 128
                                                                                                                                                                                                                                                                                                           16 RVFRDRREAGRVLAEL-----LAAYRDQPDVIVLGLARGGLPVAWEVAAALHAPLDAF
                                                                                                                                                                                                                                                                                                                                                                                Similarity
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AMINO ACID
                                                                                                                                 GERPPTDITGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAA---PESTCREFA
                                            GLVDDVVCATMPTPFLAVGESFWDFRQVTDEEVRRLLATPTAGPSL------
                                                                                        EERQRT-MNRRYVLSLSGALLASSCM------TVLVAVPVARAQQASTAMTTA 1596
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Three Embarcadero Center
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James H
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19.5%;
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                                                                                                                                                                                                                                                                                                                                                                                Score 134.5; DB 1;
Pred. No. 0.0023;
                                                                                                                                                                                                                                                                                                                                                            Mismatches 298;
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                                                                                                                                                                                --AKHALRRRRELQ 1550
                                                                                                                                                                                                                                                                                                                                                            235;
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                                                                                                                                    185
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US-09-252-991A-26723

ORGANISM: Pseudomonas aeruginosa

LENGTH: 685 TYPE: PRT

Query Match Best Local &

Similarity

Conservative

57;

Matches 132;

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                                                                                                                                      NUMBER OF SEQ ID NOS: 34
SOFTWARE: FastSEQ for Windows Versio:
SEQ ID NO 14
LENGTH: 3562
TYPE: PRT
ORGANISM: Micromonospora megalomicea
5-09-679-279-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 14, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Patent No. 6524841
GENERAL INFORMATION:
                                                                    Matches
                                                                                                     Query Match
                                                                                                                                                                                                                                                            CURRENT APPLICATION NUMBER: US/09/679,279
CURRENT FILING DATE: 2000-10-04
PRIOR APPLICATION NUMBER: US 60/158,305
PRIOR FILING DATE: 1999-10-08
PRIOR APPLICATION NUMBER: US 60/190,024
PRIOR APPLICATION NUMBER: US 60/190,024
PRIOR FILING DATE: 2000-03-17
                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: McDaniel, Robert
APPLICANT: Volchegursky, Yanina
TITLE OF INVENTION: Recombinant Megalomicin Biosynthetic
TITLE OF INVENTION: Genes and Uses Thereof
FILE REFERENCE: 300622004700
                                                                   Local Similarity
les 172; Conserv
 2580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2129
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1653 GNREA---AADTLRHLQQVAPGSAAAGNLNDLLSERAISQSDLSQIRSLAGSGQNAQAVA 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         391
                                  47
                                                                                                                                                                                                                             FastSEQ for Windows Version 4.0
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 APGKLPFAWR-GVTLHA-TGATAVRVVATPAGPDAVALRVTDPTGQLVATVDALVVRDAG
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                                ARGGLPVAWEVAAALHAPLDAFVVRKLGAP-GHDEFAVGALASGGRVVVNDD--VVRGLR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/09679279
                                                                   3.8%; Score 134; DB 2; Length 3562; llarity 24.1%; Pred. No. 0.0034; Conservative 64; Mismatches 273; Indels 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----ADEALSGFERFPAWMWRNTVVRDFVE-WLRTR-
                                                                    204;
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; LENGTH: 535
; TYPE: PRT
; ORGANISM: Pseudomonas aeruginosa
US-09-252-991A-17140
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US-09-252-991A-17140
                                                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/09/252,991A CURRENT FILING DATE: 199-02-18 PRIOR APPLICATION NUMBER: US 60/074,788 PRIOR FILING DATE: 1998-02-18 PRIOR APPLICATION NUMBER: US 60/094,190 PRIOR PILING DATE: 1998-07-27 NUMBER OF SEQ ID NOS: 33142 SEQ ID NO 11140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 17140, Application US/09252991A Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                          Matches 137;
                                                                                      Best Local Similarity
                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: MARC J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AMD AMINO ACID SEQUENCES RELATING
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107198.136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3063
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  309
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DGQA-YGFAAAFGAGPS----CEREAVE----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SGALROA-----GFYGLDLYSLHRSIQEVISYLDKVDPRAA--ARARARYACFDHACAD 414
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MTAAADVTRRSPRRVFRDRREAGRVLAELLAAYRDQPDVIVLGLARGGLPVAWE-VAAAL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VTSWNLRDQHMAQTLGSLLTH------LDR-----HLDAPPARIVVWAHNSHVGDA 530
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AELRADVEGLGATIEIVACDTADREALAALLDSIPADRPL-----TGVVH
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AQRKAVRPALHGSVEELFHQTADSFLVSARL-SRDAEAPLDVVRLGRAIGVVY 628
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                                                          Conservative
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                                                    3.7%; Score 131; DB 2; 1
25.4%; Pred. No. 0.00028;
ative 44; Mismatches 193;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ------LLAEDELFYAQQNAQTVRDAEVYYRAMFSGR 485
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                                                                                                              Length 535;
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                                                          Indels 166;
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                                                       Gaps
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RESULT 11
US-08-426-630-49
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APPLICANT: BLANCH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: JOEL; DEBUSSCHE, LAURENT; LEVCY SCHIL,
APPLICANT: THIBAUT, DENIS
TITLE OF INVENTION: POLYPEPTIDES INVOLVED IN THE
TITLE OF INVENTION: BIOSYNTHESIS OF COBALAMINS AN
TITLE OF INVENTION: CODING FOR THESE POLYPEPTIDES
TITLE OF INVENTION: USB.
NUMBER OF SEQUENCES: 60
CORRESPONDENCE ADDRESS:
                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/916,151
FILING DATE: 14-SEP-1992
APPLICATION NUMBER: PCT/FR91/00054
                                                                                                                                                                                                                           COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WORDFREEDT 5.1
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM: MEDIUM TYPE: FLOPPY
                   FILING DATE: 30-JAN-1991
ATTORNEY/AGENT INFORMATION:
NAME: F. F. CALVETTI
                                                                                                                                                              APPLICATION NUMBER: FILING DATE: CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: MORGAN & FINNEGAN STREET; N.W STREET; 555 13TH STREET, N.W CITY: WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                        COUNTRY: USA
REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      431 DQFQHAQVQVATVAGPGFAEAVALADDVQAEVVDPRGHVLQLAVVDDVLRRTGAVDEDHV
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                                                                                                                                                                                                                                                                                                                                                                                                DISTRICT OF COLUMBIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Application US/08426630
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                                                                                                                                                                                                                                                                                                                  FLOPPY DISK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POLYPEPTIDES INVOLVED IN THE BIOSYNTHESIS OF COBALAMINS AND/OR COBAMIDES, DNA SEQUENCES CODING FOR THESE POLYPEPTIDES, PREPARATION METHOD AND THEIR
                                                                                                                                                                                                         US/08/426,630
28,557
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Best Local Similarity
Matches 127; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER: 12
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 857-7887
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NAME/KEY:
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ORIGINAL SOURCE:
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DEVELOPMENTAL STAGE
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TOPOLOGY: Li
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                   1153 SLEEEIGRVVRARVVNPKWIDGVM----
                                                                                                                                                                                    1044 GAYGAALQALIDEKGWETKADLAEAYLTWGAYAYGAGEEGKAERDLF--EERLRTIEAVV 1101
                                                                                                                                                                                                                                                                        984
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                                                                                                                                                                                                                             430
                                                                                                                                                                                                                                                                                                                                                                                                329 EALSGEERFPAMMWRNTVVRDFVEWLRTRNQRYE-----SGALRQAGFYGLDL 376
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  284 -QARAAMTQWLIEEKGFGAVAAE-----ADWPDAYRVNRY----VRGLGEDTNAD 328
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 741 AGLRGFAIPTSAGGNPA-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               683 LDAYLCDLKEMQIRDGLHIFGVAPEGRLLT--DLTVALARVPRGLGEGGDQSLQRAIAAD
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                                                                                                                                                                                                                                                                                                                                                           LALIGAK--PTW-----DMVSRRVMGYEIVPLAVLGRPRVDVTLRISGFF-RDA 983
                                                                                                                                                                                                                                                                                                                                                                                                                                           VDSRAVPTPAAYE---LGKKSAELLIRRYLQDHGEWPSSFGLTAWGTANMRTGGDDIAQA 937
                                                        AHNSHVGD-ARATEV---WADGQLTLGQIVRERYGDESRSIGFSTYTGTVTAASE----W
                                                                                                      QNQDNREHDLLDSDDYYQ--FEGGMSA-----AAEQLGGHRPAIYHNDHSRPEKPVIR 1152
                                                                                                                                                                                                                           SCEREAVEOLVD------VQRNALAYARQDGLLAEDELFYAQQNAQTVR---
                                                                                                                                                                                                                                                                      FPDQIALFDKAIRAVALEEDDADNMIAARMRAESRRLEAEGVEAAEAARRASYRVFGAKP 1043
                                                                                                                                                                                                                                                                                                             YS-----LHRSIQEVISYLDKVDPRAAARARARYACFDHACADDGQAYGFAA--AFGAGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PSLRRPAASTAADVLR----RVAIDAPGGVPTHEVLAELVGDARIVLIGESSHGTHEFY-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ILADLSDAPWRTAGDTVERI-ELLAANLVSGELACPDHWANTRAVLGEIETRL-----K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PSISNSGAAEMTGFLTGLSGRFVAPGPSGAPTR-----GRPDVLPTGRN-----FYS
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                                                                                                                                          -----DAEVYYRAMFSGRVTSWNLRDQHMAQTLGSLLTHLDRHLDAPPARIVVW 521
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                       RHG-----YKGAFEIAATVDYMF 1194
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CURRENT APPLICATION NUMBER: US/09/410,551B
CURRENT FILING DATE: 1999-10-01
PRIOR APPLICATION NUMBER: US 60/139,650
PRIOR PILING DATE: 1999-06-17
PRIOR APPLICATION NUMBER: US 60/123,810
PRIOR FILING DATE: 1999-03-11
PRIOR APPLICATION NUMBER: US 60/102,748
PRIOR APPLICATION NUMBER: US 60/102,748
PRIOR FILING DATE: 1998-10-02
NUMBER OF SEQ ID NOS: 72
SOFTWARE: FBSTSEQ for Windows Version 4.0
SEQ ID NO 72
SEC ID NO 72
SEC ID NO 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-410-551B-72
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APPLICANT: REEVES, CHRISTOPHER
APPLICANT: CHU, DANIEL
APPLICANT: KHOSLA, CHAITAN
APPLICANT: SANTI, DANIEL
APPLICANT: WU, KAI
TITLE OF INVENTION: POLIKETIDE SYNTHASE ENZYMES
TITLE OF INVENTION: CONSTRUCTS THEREFOR
FILE REFERENCE: 30062-20026.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -09-410-551B-72
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TYPE: PRT
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                                                                                                                                                                                                                                                      4727
                                                                                                                                                                                                                                                                                                                                              4667 DGAKRDAIAALGEPHVRLRDGLFEAARLMRATPSLTLPDTGSWQLRPSATGSLDDLAVVP
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  342
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           163;
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                                                                                                                                                                                                         YQARAAMTQWLIEEKGFGAVAAEADWPDAYRVNRYVRGLGEDTNADEALSGFERF-PAWM 341
                                                                                                                                                                                                                                                    TDAPDRPLAAGEVRIAVRAAGLNFRDVTVALGVVADARPLGSBAAGVVL--ETGPGVHDL 4784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DIAER---
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LPVAWEVAAALHAPLDAFVVRKLGAPGHDEFAVGALASGGRVVVNDDVVRGLRITPQQLR 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DLAPADPMLRVGWAPVPVPAGAGPSDADVLTLRGDDADPLGETRDLTTRVLDALLRADRF 4626
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                                                                                                                                                                                                                                                                                                                                                                                           CATMPTPFLAVGESFWDFRQVTDEEVRRLLATPT----AGPSLRRPAASTAADVLRRVA 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PTDITGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPESTCREFAGLVDDVV 192
                                                                                                               WRNTVVRDFVEWLRTRNQRYESGALRQAGFYGL-DLYSLHRSIQEVISYLDKVDPRAAAR 400
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                                                                                                                                                            -GMLÁGÁFGÞVÁITDRRLLGRMÞDGWTFÞQÁASVMTAFATÁW-
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                                                                    -----YGLVDLAGL-RPGEKVLIHAAATGVGAAAV 486:
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; ORGANISM: Streptomyces hygroscopicus
US-09-940-316B-72
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US-09-940-316B-72
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TITLE OF INVENTION: POLYKETIDES ENCODING THE
TITLE OF INVENTION: GENE CLUSTER
TITLE OF INVENTION: GENE CLUSTER
FILE REPERENCE: 30062-20026.11
CURRENT APPLICATION NUMBER: US/09/940,316B
CURRENT FILING DATE: 2001-08-27
PRIOR APPLICATION NUMBER: 09/410,551
PRIOR APPLICATION NUMBER: 09/410,550
PRIOR APPLICATION NUMBER: US 60/139,650
PRIOR FILING DATE: 1999-06-17
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SOFTWARE: FastSEQ for Windows Version
SEQ ID NO 72
LENGTH: 6396
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION NUMBER: US 60/123,810 PRIOR FILING DATE: 1999-03-11
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                                                                                                                                                                                                                                                      4513 LPFSWH-GVRFHA-TGATMLRVAVVPGPDGLRLHAADSGNRPVATIDAL----VTRSPEA 4566
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CATMPTPFLAVGESFWDFRQVTDEEVRRLLATPT-----AGPSLRRPAASTAADVLRRVA 247
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KHOSLA, CHAITAN
SANTI, DANIEL
                                                                                                                                                                                                           DIAER------
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                                                                       ----VIFQVTGGLAAKAAA-GLVRTAQNEQPGRFFL-VETDP------GEVL
                                                                                                                                                              DLAPADPMLRVGWAPVPVPAGAGPSDADVLTLRGDDADPLGETRDLTTRVLDALLRADRP
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                                                                                                               PTDITGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPESTCREFAGLVDDVV 192
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                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                        64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 130; DB 2; Length 6396; Pred. No. 0.024;
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                                                                                                                                                                                                         -EGRELLRR--ESAYRGERP 132
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US-09-477-962-117
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US-09-477-962-117
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SEQ ID NO 117
LENGTH: 2841
TYPE: PRT
ORGANISM: Streptomyces verticillus
FEATURE:
                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 117, Application US/09477962 Patent No. 6927286
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APPLICANT: EDWARDS, DANIEL J.
APPLICANT: EDWARDS, DANIEL J.
TITLE OF INVENTION: BLEOMYCIN GENE CLUSTER COMPONENTS AND THEIR USES
FILE REFERENCE: 407T-895820US
FILE REFERENCE: 407T-895820US
FILE REFERENCE: 407T-895820US
FILE REFERENCE: 407T-895820US
FILE REFERENCE: 407T-895820US
CURRENT FILING DATE: 2000-01-05
FRIOR APPLICATION NUMBER: 60/115,435
FRIOR FILING DATE: 1999-01-06
FRIOR APPLICATION NUMBER: 60/118,848
FRIOR FILING DATE: 1999-02-05
FRIOR FILING DATE: 1999-02-05
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APPLICANT: DU, LIANGCHENG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              401
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                                                                                                                  TAAPVVITRDLPADPGRVHLDPRQAPADDRDPLPRLHRDQAAYIIFTSGSTGAPKGVVVR
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20.9%; Pred. No. 0.0086;
tive 70; Mismatches 263;
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-VAWEVAAALHAPLDAFVVRKLGAPGH-----DEFA 82
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                                                                                                                                                                                                                                                                                                                                   Length 2841;
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                                                                                                                                                                                                                                                                                                                                                                  Sequence 8, Application US/10042665A
Patent No. 6924106
GENERAL INFORMATION:
APPLICANT: Schupp, Thomas
APPLICANT: Schupp, Thomas
APPLICANT: Toupet, Christine
APPLICANT: Engel, Nathalie
TITLE OF INVENTION: Rifamycin biosynthesis generated by the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of
                                                                                                              ; TYPE: PRT
; ORGANISM: Amycolatopsis mediterranei
US-10-042-665A-8
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VGALASGGRVVVNDDVVRGLRITPQQLRDIAEREGRELLRRESAYRGERPPTDITGKTVI 142
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APPLICANT: ROBERKRANDS, Ida
APPLICANT: ROBERKRANDS, Ida
APPLICANT: Stryhn, Anette
ITITE OF INVENTION: Therapeutic TB Vaccine
FILE REFERENCE: SSISAUSA
CURRENT APPLICATION NUMBER: US/10/617,038
CURRENT FILING DATE: 2003-07-13
PRIOR APPLICATION NUMBER: US 60/401,725
PRIOR APPLICATION NUMBER: US 60/401,725
PRIOR FILING DATE: 2002-08-07
NUMBER OF SEQ ID NOS: 187
SOFTWARE: PatentIn version 3.2
SEQ ID NO 23
LENGTH: 681
TYPE: PRT
ORGANISM: Mycobacterium tuberculosis
US-10-617-038-23
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US-10-617-038-23
; Sequence 23, Application US/10617038
; Publication No. US20040057963A1
; GENERAL INFORMATION:
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  AVAAEADWPDAYRVNRYVRGLGEDTNADEALSGFERFPAWMRNTVVRDFVEWLRTRNQR
                                                                                                         DVLRRVAIDAPGGVPTHEVLAELVGDARIVLIGESSHGTHEFYQARAAMTQWLIEEKGFG
                                                                                                                                                                                                            CREFAGLVDDVVCATMPTPFLAVGESFWDFRQVTDEEVRRLLATPTAGPSLRRPAASTAA
                                                                                                                                                                                  CREFAGLVDDVVCATMPTPFLAVGESFWDFRQVTDEEVRRLLATPTAGPSLRRPAASTAA
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                                                                                 DVLRRVAIDAPGGVPTHEVLAELVGDARIVLIGESSHGTHEFYQARAAMTQWLIEEKGFG
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US-10-329-493-9102
US-09-980-217-9
US-10-203-295-20
US-10-203-295-37
US-10-819-386A-3
US-10-437-963-193818
US-10-497-730A-4
US-10-937-730A-4
US-10-171-311-52
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US-10-819-31-657-35
US-10-171-193-35
US-10-473-193-35
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Pred. No. 4.8e-305;
Mismatches 0;
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Scoring table: Sequence: Title: Perfect score:

BLOSUM62 Gapop 10.0 , Gapext 0.5

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protein search, using sw

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Database

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Sequence 10, Application US/11045942
Publication No. US20050172350A1
GENERAL INFORMATION:
APPLICANT: Kloek, Andrew P.
APPLICANT: Williams, Deryck Jeremy
APPLICANT: Williams, Deryck Jeremy
APPLICANT: Salmon, Brian
TITLE OF INVENTION: NEMATODE PPPT-LIKE SEQUENCES
FILE REFERENCE: 12557-005001
CURRENT APPLICATION NUMBER: US/11/045,942
CURRENT FILING DATE: 2005-01-27
PRIOR APPLICATION NUMBER: US/10/113,201
PRIOR APPLICATION NUMBER: US/60/280,192
PRIOR APPLICATION NUMBER: US 60/280,192
PRIOR FILING DATE: 2001-03-30
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SOFTWARE: FastSEQ for Windows
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                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT
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                  256
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                THEVLAELVGDARIVLIGESSHGTHEFYQARAAMTQWLIEEKGFGAVA-AEADWPDAYRV
                                               TPALFFAVGQGYRNFTQTSDDEVVAFL------DRAHRDFAEAGAIDAAADPP
                                                                                                            LTGRIAVIVDDGIATGATAKAACOVARAHGADKVVLAVPIGPDDIVARFAGYADEVVCLA 180
                                                                                                                                          ITGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPESTCREFAGLVDDVVCAT 195
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                                                                                                                                                                         PFQPELAFGAIGEDGVRVLNDDVVRGTHLDAAAMDAVERKQLIELQRRAERFRRGRDRIP
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US-11-058-869-10
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Sequence 10, Application US/11110578 Publication No. US20050186631A1 GENERAL INFORMATION:
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; TYPE: PRT ; ORGANISM: Mycobacterium tuberculosis US-11-058-869-10
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SOFTWARE: FAStSEQ for Windows Version
SEQ ID NO 10
LENGTH: 443
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APPLICANT: Kloek, Andrew P.
APPLICANT: Williams, Deryck Jeremy
APPLICANT: Salmon, Brian
TITLE OF INVENTION: NEMATODE PPPT-LIKE SEQUENCES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 10, Application US/11058869 Publication No. US20050172363A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION NUMBER: US/11/058,869
CURRENT FILING DATE: 2005-02-16
PRIOR APPLICATION NUMBER: US/10/113,201
PRIOR FILING DATE: 2002-03-29
PRIOR APPLICATION NUMBER: US 60/280,192
PRIOR FILING DATE: 2001-03-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILE REFERENCE: 12557-005001
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129; Conserv
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                                                GALROAGFYGLDLYSLHRSIQEVISYLDKVDPRAAARA 401
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TASLPVGYFG-----
                                                                                                          RNRYVAEVLTGAGFATLLFDLLTPEBERNRANVFDIELLASRLI-DVTGWLATQ----PD
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llarity 32.4%;
Conservative 52
-ASTGAGAALVAAADPRVNVRA
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355
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GENERAL INFORMATION:
APPLICANT: Kloek, Andrew P.
APPLICANT: Williams, Deryck Jeremy
APPLICANT: Salmon, Brian
TITLE OP INVENTION: NEMATODE PPPT-LIKE SEQUENCES
FILE REFERENCE: 12557-005001
CURRENT APPLICATION NUMBER: US/11/045,942
CURRENT FILING DATE: 2005-01-27
PRIOR APPLICATION NUMBER: US/10/113,201
PRIOR FILING DATE: 2002-03-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PILE REFERENCE: 12557-005001

CURRENT APPLICATION NUMBER: US/11/110,578

CURRENT FILING DATE: 2005-04-20

PRIOR APPLICATION NUMBER: US/10/113,201

PRIOR APPLICATION NUMBER: US 60/280,192

PRIOR FILING DATE: 2001-03-30

NUMBER OF SEQ ID NOS: 10

SOFTWARE: PABESEQ for Windows Version 4.0

SEQ ID NO 10

LENGTH: 443
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US-11-045-942-4
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SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 4
LENGTH: 233
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 4, Application US/11045942 Publication No. US20050172350A1
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Best Local Similarity
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                                                                                           PRIOR APPLICATION NUMBER: US 60/280,192
PRIOR FILING DATE: 2001-03-30
NUMBER OF SEQ ID NOS: 10
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TITLE OF INVENTION: NEMATODE PPPT-LIKE SEQUENCES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      196 MPTPFLAVGESFWDFRQVTDEEVRRLLATPTAGPSLRRPAASTAADVLRRVAIDAPGGVP 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                364 GALROAGFYGLDLYSLHRSIQEVISYLDKVDPRAAARA 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             228 LRDEEVQVVAGP----VPVAGHLT-------VPEKPRGIVVFAHGSGSSRHSI 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121 LTGRIAVIVDDGIATGATAKAACQVARAHGADKVVLAVPIGPDDIVARFAGYADEVVCLA 180
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16 RVFRDRRBAGRVLAELLAAYRDQPDVIVLGLARGGLPVAWEVAAALHAPLDAFVVRKLGA 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            THEVLABIVGDARIVLIGESSHGTHEFYQARAAMTQWLIEEKGFGAVA-AEADWPDAYRV 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TPALFFAVGQGYRNFTQTSDDEVVAFL-----DRAHRDFAEAGAIDAAADPP 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ITGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPESTCREFAGLVDDVVCAT 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PGHDEFAVGALASGGRVVVNDDVVRGLRITPQQLRDIABREGRELLRRESAYRGERPFTD 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KLFDDRGDAGRQLAQRLAQLSGKA-VVVLGLPRGGVPVAFEVAKSLQAPLDVLVVRKLGV 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TASLPVGYFG-----ASTGAGAALVAAADPRVNVRA 355
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SOFTWARE: FastSEQ for Windows Version 4.0; SEQ ID NO 4; LENGTH: 233; TYPE: PRT; ORGANISM: Meloidogyne incognita PPPT US-11-058-869-4
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US-11-045-942-4
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Best Local :
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CURRENT FILING DATE: 2005-02-16
PRIOR APPLICATION NUMBER: US/10/113,201
PRIOR FILING DATE: 2002-03-29
PRIOR APPLICATION NUMBER: US 60/280,192
PRIOR FILING DATE: 2001-03-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Salmon, Brian
TITLE OF INVENTION: NEMATODE PPPT-LIKE SEQUENCES
FILE REFERENCE: 12557-005001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQ ID NOS: 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Kloek, Andrew P.
APPLICANT: Williams, Deryck Jeremy
                                                                                                                                                                                                                                                                                   Match 11.9%;
Local Similarity 41.9%;
les 88; Conservative 44
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                                   189 DDVVCATMPTPFLAVGESFWDFRQVTDEEV 218
                                                                                         129 GERPPTDITGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPESTCREFAGLV 188
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                                                                                                                                           65 RKIGAPGHEEYGIGAVVEGNPPELVMNEDAVKYTQPPEGYVQAMMEKQLKEIARQRNRYL
                                                                                                                                                                71 RKLGAPGHDEFAVGALASGG--RVVVNDDVVRGLRITPQQLRDIAEREGRELLRRESAYR 128
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NEVLVLETPPNFSAVGLHYTKFDQTSDEEV
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Pred. No. 1.1e-28;
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Pred. No. 1.1e-28;
4; Mismatches 75;
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US-11-110-578-4

Sequence 4, Application US/11110578 Publication No. US20050186631A1

GENERAL INFORMATION:

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                                                                                                                                                                                                                                                                 PRIOR APPLICATION NUMBER: US 60/280,192
PRIOR FILING DATE: 2001-03-30
NUMBER OF SEQ ID NOS: 10
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
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                                                                                         Matches
                                                                                                                                  Query Match
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APPLICANT: Williams, Deryck Jeremy
APPLICANT: Salmon, Brian
TITLE OF INVENTION: NEMATODE PPPT-LIKE SEQUENCES
FILE REFERENCE: 12557-005001
CURRENT APPLICATION NUMBER: US/11/110,578
CURRENT FILING DATE: 2005-04-20
CURRENT FILING DATE: 2005-04-20
                                                                                                                                                                                                                                                                                                                                                                                 FILE REFERENCE: 12557-005001
CURRENT APPLICATION NUMBER: US/11/045,942
CURRENT FILING DATE: 2005-01-27
PRIOR APPLICATION NUMBER: US/10/113,201
PRIOR FILING DATE: 2002-03-29
PRIOR FILING DATE: 2002-03-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Kloek, Andrew P.
APPLICANT: Williams, Deryck Jeremy
APPLICANT: Salmon, Brian
TITLE OF INVENTION: NEMATODE PPPT-LIKE SEQUENCES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: US/10/113,201
PRIOR FILING DATE: 2002-03-29
PRIOR APPLICATION NUMBER: US 60/280,192
PRIOR FILING DATE: 2001-03-30
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TYPE: PRT
ORGANISM: Meloidogyne incognita PPPT
                                                                                                                                                                                                      TYPE: PRT
ORGANISM: Meloidogyne
                                                                                                                                                                                                                                                   LENGTH: 229
                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           185 NEVLVLETPPNFSAVGLHYTKFDQTSDEEV 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           129 GERPPTDITGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPESTCREFAGLV 188
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                       65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12 RSPRRVFRDRREAGRVLAELLAAYRDQPD-VIVLGLARGGLPVAWEVAAALHAPLDAFVV 70
  LFIDRKDAGQKLAKALAHILPQRDNIVVLALPRGGVPVACEAADAFQAPLDLLMVRKIGA
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                                                                                         Conservative
                                                                                     11.4%; Score 401.5; DB 6; 40.2%; Pred. No. 3e-27; tive 45; Mismatches 77;
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                                                                                                                                  DB 6;
                                                                                                                                  Length 229;
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Sequence 5, Application US/11058869
Publication No. US20050172363A1
GENERAL INFORMATION:
APPLICANT: Klock, Andrew P.
APPLICANT: Williams, Deryck Jeremy
APPLICANT: Salmon, Brian
TITLE OF INVENTION: NEMATODE PPPT-LIKE SEQUENCES
FILE REFERENCE: 12557-005001
CURRENT APPLICATION NUMBER: US/11/058,869
CURRENT FILING DATE: 2005-02-16
PRIOR APPLICATION NUMBER: US/10/113,201
PRIOR APPLICATION NUMBER: US/10/113,201
PRIOR APPLICATION NUMBER: US/005-03-29
PRIOR APPLICATION NUMBER: US 60/280,192
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SOFTWARE: FRSTSEQ for Windows Version 4.0
SEQ ID NO 6
LENGTH: 229
TYPE: PRT
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Publication No. US20050172350A1
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CURRENT APPLICATION NUMBER: US/11/045,942
CURRENT FILING DATE: 2005-01-27
PRIOR APPLICATION NUMBER: US/10/113,201
PRIOR FILING DATE: 2002-03-29
PRIOR APPLICATION NUMBER: US 60/280,192
PRIOR APPLICATION NUMBER: US 60/280,192
PRIOR EPILING DATE: 2001-03-30
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APPLICANT: Williams, Deryck Jeremy
APPLICANT: Salmon, Brian
TITLE OF INVENTION: NEMATODE PPPT-LIKE SEQUENCES
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Sequence 6, Application US/11058869
Publication No. US20050172363A1
GENERAL INFORMATION:
APPLICANT: Klock, Andrew P.
APPLICANT: Williams, Deryck Jeremy
APPLICANT: Salmon, Brian
TITLE OF INVENTION: NEMATODE PPPT-LIKE SEQUENCES
FILE REFERENCE: 12557-005001
CURRENT APPLICATION NUMBER: US/11/058,869
CURRENT ELING DATE: 2005-02-16
PRIOR APPLICATION NUMBER: US/10/113,201
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; LENGTH: 229
; TYPE: PRT
; ORGANISM: Meloidogyne javanica PPPT US-11-058-869-5
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; LENGTH: 229
; TYPE: PRT
; ORGANISM: Heterodera glycines PPPT
US-11-058-869-6
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US-11-058-869-6
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR FILING DATE: 2002-03-29
PRIOR APPLICATION NUMBER: US 60/280,192
PRIOR FILING DATE: 2001-03-30
NUMBER OF SEQ ID NOS: 10
SOPTWARE: FastSEQ for Windows Version 4.0
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NUMBER OF SEQ ID NOS: 10
SOFTWARE: FastSEQ for Windows Version 4.0
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Local Similarity 40.2%;
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189
                                    194 ATMPTPFLAVGESFWDFRQVTDEEVRRLL 222
                                                                             129 VSLEGRIAIVVDDGTATGGTARVALKALROKNVSRAILASPMAPSDTLAELRAEGNEVLC 188
                                                                                                     134 TDITGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAAPESTCREFAGLVDDVVC 193
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                                                                                                                                                             PGHEEYGIGAVVEGNPPELVMNEEAVRITRPSEAYVQQQMQKQLKEMERQRKTYLGDKPP 128
                                                                                                                                                                                                      PGHDEFAVGALASGG--RVVVNDDVVRGLRITPQQLRDIAEREGRELLRRESAYRGERPP 133
LETPPNFSAVGLHYQRFDQTSDEEVIRCM 217
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                                                                                                                                                                                                                                                                                                                                                                    DB 6; Length 229;
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APPLICANT: Kloek, Andrew P.
APPLICANT: Williams, Deryck Jeremy
APPLICANT: Williams, Deryck Jeremy
TITLE OF INVESTION: MEMATODE PPT-LIKE SEQUENCES
FILE REFERENCE: 12557-005001
CURRENT APPLICATION NUMBER: US/11/110,578
CURRENT FILING DATE: 2005-04-20
PRIOR APPLICATION NUMBER: US/10/113,201
PRIOR APPLICATION NUMBER: US/10/113,201
PRIOR APPLICATION NUMBER: US 60/280,192
PRIOR APPLICATION NUMBER: US 60/280,192
PRIOR FILING DATE: 2001-03-30
NUMBER OF SEQ ID NOS: 10
SOFTWARE: FRSESEQ for Windows Version 4.0
SEQ ID NO 6
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APPLICANT: Williams, Deryck Jeremy
APPLICANT: Williams, Deryck Jeremy
APPLICANT: Salmon, Brian
TITLE OF INVENTION: NEMATODE PPT-LIKE SEQUENCES
FILE REFERENCE: 12557-005001
CURRENT APPLICATION NUMBER: US/11/110,578
CURRENT FILING DATE: 2005-04-20
PRIOR APPLICATION NUMBER: US/10/113,201
PRIOR APPLICATION NUMBER: US/01/113,201
PRIOR APPLICATION NUMBER: US 60/280,192
PRIOR APPLICATION NUMBER: US 60/280,192
PRIOR FILING DATE: 2001-03-30
NUMBER OF SEQ ID NOS: 10
PRIOR FILING DATE: 2001-03-30
NUMBER OF SEQ ID NOS: 10
; LENGTH: 229
; TYPE: PRT
; ORGANISM: Heterodera glycines
US-11-110-578-6
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US-11-110-578-6
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US-11-110-578-5
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US-11-110-578-5
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Publication No. US20050186631A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 6, Application US/11110578 Publication No. US20050186631A1
                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
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Best Local Similarity 40.2%;
Matches 84; Conservative 4
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SEQ ID NO 5
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TYPE: PRT
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Pred. No. 3e-27;
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Query Match Best Local Similarity

11.4%;

Score 401.5; DB Pred. No. 3e-27;

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Length 229;

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RESULT 15
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APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OP INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR FILING DATE: 2001-05-30
PRIOR FILING DATE: 2001-05-30
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US-10-156-761-13240
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Sequence 14961, Application US/10156761
Publication No. US20030119018A1
GENERAL INFORMATION:
APPLICANT: OMURA, SATOSHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 13240
LENGTH: 210
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Publication No. US20030119018A1
GENERAL INFORMATION:
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                                                                                                                                           CLYEPELFYAVGEWYEDFEQLSDDEV 205
                                                                                                                                                                                CATMPTPFLAVGESFWDFRQVTDEEV 218
                                                                                                                                                                                                                  RIRGRTVILVDDGLATGVTARAALRHLRGQGAAGLILAVPVGSRAVETLHBEA---DDVI
                                                                                                                                                                                                                                                                                                                          APGHDEFAVGALASGGRVVVNDDVVRGLRITPQQLRDIAEREGRELLRRESAYRGERPPT 134
                                                                                                                                                                                                                                                                                                                                                              FRDRRQAGRELAAELLRRAEKGELTDPLVLALPRGGVPVAAEIAHALKAPLDVLVVRKIG
                                                                                                                                                                                                                                                                                                                                                                                FRDRREAGRVL-AELL--AAYRDQPDVIVLGLARGGLPVAWEVAAALHAPLDAFVVRKLG 74
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ISHIKAWA, JUN
HORIKAWA, HIROSHI
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PRIOR FILING DATE: 2001-05-30
PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 14961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
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CURRENT FILING DATE: 2002-05-29
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APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
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                                                                                                        ERYGDESRSIGFSTYTGTVTAASEWGGIAQRKAVRPALHGSVEELFHQT--ADSFLVSAR
                                                                                                                                                                   MRYRDSAMAAN----VLWWQRHTG---TKVLLAAHDAHVG--YRTYDPANYPKMQGAFLH
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VAAPAREWLDRARPTRSIGTDYPDGPH-----DIALASTHDILIHLHRVEA
                                     LSRDAEAPLDVVRLGRAIGVVYLPATERQSHYLHVRPADQFDAMIHIDQTRA
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HORIKAWA, HIROSHI
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Gaps

Search completed: March Job time : 144.21 secs 23, 2006, 06:28:11

658

429 909

Title: Perfect score: Sequence:

US-10-617-038-23 3508

Scoring table:

Searched:

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9283, Ap
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1: /cgn2_6/ptodatta/1/pubpaa/USO8_NEW_PUB.pep:*

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US-11-0858-730-89
US-11-055-822-998
US-11-075-185-7
US-11-075-185-8
US-11-075-185-8
US-11-075-185-8
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CURRENT APPLICATION NUMBER: US/11/143,980
CURRENT FILING DATE: 2005-06-03
PRIOR APPLICATION NUMBER: US 60/664,483
PRIOR PILING DATE: 2005-03-23
PRIOR APPLICATION NUMBER: US 60/576,895
PRIOR FILING DATE: 2004-06-03
PRIOR FILING DATE: 2004-06-03
NUMBER OF SEQ ID NOS: 72
SOFTWARE: Patentin version 3.3
SEQ ID NO 50
LENGTH: 3073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 1

US-11-143-980-50

Sequence 50, Application US/11143980

Publication No. US20050272133A1

GENERAL INFORMATION:

APPLICANT: He, Min

APPLICANT: Hucul, John

APPLICANT: Haltli, Bradley A.

APPLICANT: Wagenaar, Melissa M.

APPLICANT: Wagenaar, Melissa M.

APPLICANT: Summers, Mia

APPLICANT: Summers, Mia

APPLICANT: Kulowski, Kerry

APPLICANT: Pong, Kevin

TITLE OF INVENTION: Biosynthetic Gene Cluster for the Production of a Complex

TITLE OF INVENTION: Polyketide
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                                                                                                                                                                                                                                                                                                                                                                                                                              ; TYPE: PRT ; ORGANISM: Streptomyces US-11-143-980-50
                                                                                                                                                                                                                                                                                                                                      Query Match 3.8%;
Best Local Similarity 22.3%;
Matches 184; Conservative 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1116 LTPERVREVLRPKVDAAWYLHELTAG-RELAEFVVFSSAAGVLGSPGQGAYAAANAWLDA 1174
                                                                                                                                                                                                       83
                                                                                                                                                                                                                                                                                          9 VTRRSPRRVFRDRREAGRVLAELLAAYRDQPDVIVLGLARGGLPVAWEVA-AALHAPLDA
                                                                                                                                                           LMAHRRAAGLPGL--
                                                                     DLARMARA-----GATPLATDQGLRLIDSARAATEALVLATPLDAAALRAQADA 1256
                                                                                                               ELLRRESAYRGERPPTDITGKTVIVVDDGLATGASMFAAVQALRDAQP-----
                                                                                                                                                                                                    FVV--RKLGAPGHDEFAVGALASGGRVVVNDDVVRGLRITPQQLRDIAEREG-----R 118
; Score 133.5; DB 7; ; Pred. No. 0.26; 72; Mismatches 269;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-858-730-8
US-11-124-367A-340
US-11-124-367A-341
US-10-979-821-14
US-11-114-922-14
US-11-114-922-14
US-11-0866-504-1
US-10-886-505-1
US-10-886-527-1
US-10-886-527-1
US-10-886-527-5
US-10-886-527-5
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US-11-077-619-34
US-11-201-916-9
US-10-858-730-7
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US-10-858-730-88
US-11-174-341-10
US-11-087-099-6692
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                                                                                                                                                             -----WAERSGMTGHLSDR 1207
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Result No.

Score

Match

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67

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192

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8 7 5 5 4 3 2 1

Minimum

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length:

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RESULT 2
US-10-724-598-49
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 49, Application US/10724598
Publication No. US20060019352A1
GENERAL INFORMATION:
APPLICANT: BLANCHE, FRANCIS;
                  COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WORDPERFECT 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/10/724,598
FILING DATE: 01-Dec-2003
CLASSIFICATION: 435
                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPPY DISK
                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES: 60
CORRESPONDENCE ADDRESS:
ADDRESSEE: MORGAN & FINNEGAN
                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: BLANCHE, FRANCIS; CAMERON, BEATRICE; CROUZET,
JOEL, DEBUSSCHE, LAURENT; LEVCY SCHIL, SOPHIE;
THIBAUT, DENIS
TITLE OF INVENTION: POLYPEPTIDES INVOLVED IN THE
BIOSYNTHESIS OF COBALAMINS AND/OR COBAMIDES, DNA SEQUENCES
CODING FOR THESE POLYPEPTIDES, PREPARATION METHOD AND THEIR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1452
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1496 TVERAGVPAASLKGSQTGVFVGAAA----QGYG----TGAGQAAEGSEGYFLTGGAGSVVS 1548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1650 GHRVLAVVRGSAVNQDGASNGLTAPN----GPSQQRVIRAALANAGLAASDVDAVEAHGTG 1700
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YLDKVDPRAAARARYACFDHACADDGQAYGFAAAFGAGPSCEREAVEQLV----DVQR 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ---TAGPSLRRPAASTAAD-----VLRRVAIDAPGGVPTHEVLAELVGDARIVLIGESSH
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                                                                                                                                                                                                                                                                                          STREET: 555 13TH STREET, N.W. CITY: WASHINGTON
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QTLGSLLTHLDRHLDAPPARIVVWAHNSHVGDARATEVWADGQLTLGQIVRERYGDESR- 556
                                                                                                                                                                                                                                                                     STATE: DISTRICT OF COLUMBIA
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                                                                                                                                                                                                                                                COUNTRY: USA
APPLICATION DATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ---SIGFSTYTGTVTAASEWGGIAQRKAVRPAL-------HGSV 590
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO: 49: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:

NAME: F. F. CALVETTI

REGISTRATION NUMBER: 28,557

REFERENCE/DOCKET NUMBER: 1290-7213

TELECOMMUNICATION INFORMATION:

TELEPHONE: (202) 857-7887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HYPOTHETICAL: NO ORIGINAL SOURCE:
                       1044 GAYGAALQALIDEKGWETKADLAEAYLTWGAYAYGAGEEGKAERDLF--EERLRTIEAVV 1101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
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                                                                                                             984
                                                                                                                                                                                                      938
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                                                                                                                                                                                                                                                                                            881 VDSRAVPTPAAYE---LGKKSAELLIRRYLQDHGEWPSSFGLTAWGTANMRTGGDDIAQA 937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    741
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    65 LDAFVVRKLGAPGHDEFAVGALASGGRVVVNDDVVRGLRITPQQLRDIAEREGRELLRRE 124
                                                                                                                                                                                                        LALIGAK -- PTW-
                                                                   SCEREAVEQLVD-------VQRNALAYARQDGLLAEDELFYAQQNAQTVR---
                                                                                                                                                       YS-----LHRSIQEVISYLDKVDPRAAARARARYACFDHACADDGQAYGFAA--AFGAGP 429
                                                                                                                                                                                                                                                                                                                                         -QARAAMTQWLIBEKGFGAVAAE-----ADWPDAYRVNRY----VRGLGEDTNAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              İLADLSDAPWRTAGDTVERI-ELLAANLVSGELACPDHWANTRAVLGEIETRL-----K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IVIAVPAAPESTCREFAGLVDDVVCATMPTPFLAVGESFWDFRQVTDEEVRRLLATPTAG 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGLRGFAIPTSAGGNPA----------RDAQPFDPLDCVMSDTWTGPKPS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IDENTIFICATION METHOD:
IDENTIFICATION: Translation product of SEQ ID NO:48
OTHER INFORMATION: SEQ ID NO: 49:
                                                                                                                FPDQIALFDKAIRAVALEEDDADNMIAARMRAESRRLEAEGVEAAEAARRASYRVFGAKP
                                                                                                                                                                                                                                                EALSGFERFPAWMWRNTVVRDFVEWLRTRNQRYE-----SGALRQAGFYGLDL
                                                                                                                                                                                                                                                                                                                                                                                     PSISNSGAAEMTGFLTGLSGRFVAPGPSGAPTR----GRPDVLPTGRN-----FYS
                                                                                                                                                                                                                                                                                                                                                                                                                                 PSIRRPAASTAADVIR----RVAIDAPGGVPTHEVLAELVGDARIVLIGESSHGTHEFY-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CELL TYPE: <Unknown>
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APPLICATION NUMBER: PCT/FR91/00054
FILING DATE: 30-JAN-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: COBN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANELLE: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUE TYPE: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Pseudomonas denitrificans
STRAIN: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY: Linear
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                                                                                                                                                                                                    ----DMVSRRVMGYEIVPLAVLGRPRVDVTLRISGFF-RDA
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Pred. No. 0.11;
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| Qy       274 ESSHGTHEFYQARAAMTQWLIEEKGFGAVAABADW  | Qy 221 LLATPTAGPSLRRPAASTAADVLRRVAIDAPGGVPTHEVLAELVGDARIVLIG 273   | QY 175 AAPESTCREFAGLVDDVVCATMPTPFLAVGESFWDFRQVTDEEVRR 220 | Qy 132 PPTDITGKTVIVVDDGLATGASMFAAVQALRDAQPAQ-IVIAVP 174 | Qy 74 GAPGHDEFAVGALASGGRVVVNDDVVRGLRITPQQLRDIAEREGRELLRRESAYRGER 131 | Qy 15 RRVFRDRREAGRVLAELLAAYRDQPDVIVLGLARGGLPVAWEVA-AALHAPLDAFVVRKL 73   | Query Match 3.6%; Score 126; DB 7; Length 7968;<br>Best Local Similarity 23.3%; Pred. No. 3.8;<br>Matches 186; Conservative 79; Mismatches 285; Indels 248; Gaps 45; | ; NUMBER OF SEQ ID NOS: 72<br>; SOFTWARE: PatentIn version 3.3<br>; SEQ ID NO 49<br>; LENGTH: 7968  | ING DATE | EFERENCE: AM-101426US IT APPLICATION NUMBER: US/11/14 IT FILING DATE: 2005-06-03 | ; AFFILCAVA: FULLY, REVIEW FOR THE PRODUCTION OF A COMPLEX TITLE OF INVENTION: Biosynthetic Gene Cluster for the Production of a Complex TITLE OF INVENTION: Deliveride | APPLICANT: Graziani, Edmund<br>APPLICANT: Summers, Mia<br>APPLICANT: Kulowski, Kerry | ; APPLICANT: He, Min<br>; APPLICANT: Hucul, John<br>; APPLICANT: Haltli, Bradley A.<br>; APPLICANT: Wagenaar Melissa M | US-11-143-980-49 ; Sequence 49, Application US/11143980 ; Sequence 40, US20050272133A1 ; Publication No. US20050272133A1 | Db 1195 AFAATTGAVRDHHFEAAYQAFIVDERVA 1222<br>RESULT 3                    | 574 GGIAQRKAVRPALHGSVEELFHQTADSFLVSARLS                           | 1153 SLEEBIGRVVRARVVNPKWIDGVMRHGYKGAFBIAATVDYMF | Qy 522 AHNSHVGD-ARATEVWADGQLTLGQIVRERYGDESRSIGFSTYTGTVTAASBW 573 | 473DAEVYYRAMPSGRVTSWNLRDQHMAQTIGSLLTHLDRHLDAPPARIVVW |
|---|--|---|---|--|---|--|---|----------|--|---|--|--|--|--|---|---|--|--|
| Db 1210 ASĞTVÄVĞĞEVAPRTEVVRVVSEĞPDVVĞEAYĞHVLEVLERVQAWVADEDLAĞE 1263  Qy 140 TVIVVDDĞLATĞASMFAAVQALRDAQPAQIVTAVPAAPESTCREFAĞLVD- 189 | Similarity 22.5%; Pred. No. 6.5;  S; Conservative 84; Mismatches 214; Indels 166; Gaps  AVGALASGGRVVVNDDVVRGLRITPQQLRDIAEREGRELLRRBSAYRGERPPTDITGK | 3.5%;   | SEQ ID NO 48  LENGTH: 7102  TYPE: PRT                   | י ענד בַּי   | CURRENT APPLICATION NUMBER: US/11/143,980 CURRENT FILING DATE: 2005-06-03 PRIOR APPLICATION NUMBER: US 60/664,483 PRIOR APPLICATION NOS-03-23 | Pong, Kev: NVENTION: B: NVENTION: 1  | ; GEMERAL INFORMATION: ; APPLICANT: He, Min ; APPLICANT: Hucul, John ; APPLICANT: Halli, Bradley A. | CT (D)   | Db 7820 VEQGPVVARPDRESAREP 7837  | Qy 644 ADQFDAMIHIDOTRALEP 661   | Qy 595 HQTADSFLVSARLSRDAEAPLDVVRLGRAIGVVYLPATERQSHYLHVRP 643                         | Qy 542 TLGQIVRERYGDESRSIGFSTYTGTVTAASEWGGIAQRKAVRPALHGSVEELF 594   | Qy 482 FSGRVTSWNLRDQHMAQTLGSLLTHLDRHLDRPARIVVWAHNSHVGDARATEVWADGQL 541   | Qy 430 SCEREAVEQLVDVQRNALAYARQDGLLAEDELFYAQQNAQTVRDAEVYYRAM 481   :    : | 7575 ALHLAAQALRSGECSLALAGGATVMATPAAFLEFSRQRALAADGRCKAFAAAADGTGWGE | 378   | CY 352 EWLKIENGKIESGALKQA-GE                                     | 7459 GGFLDDAAAFDPGFFGISPREALAMDPQQRLLLEVAWEAF        |

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                                                                                                                                                                                                      SEQ ID NO 89
LENGTH: 528
TYPE: PRT
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APPLICANT: Bailey, Richard B.
APPLICANT: Blomquist, Paul
APPLICANT: Doten, Reed
                                                                                                     Query Match
Best Local Similarity
                                                                                  Matches
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APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
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PRIOR APPLICATION NUMBER: US 60/475,000
PRIOR FILING DATE: 2003-05-30
PRIOR APPLICATION NUMBER: 06/551,860
PRIOR FILING DATE: 2004-03-10
NUMBER OF SEQ ID NOS: 364
SOFTWARE: FASUSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: YOTGEY, PETER S.
TITLE OF INVENTION: METHODS AND COMPOSITIONS
TITLE OF INVENTION: PRODUCTION
                                                                                                                                                                                                                                                                                                                                                                                              FILE REFERENCE: 14184-030001
CURRENT APPLICATION NUMBER: US/10/858,730
CURRENT FILING DATE: 2004-06-01
                                                                                                                                                                                   ORGANISM: Mycobacterium leprae
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                                                                                  118;
                                    30 ELLAAYRDQPDVIVLGLARGGLPVAWEVAAALHAPLDAFVVRKLGAPGHDEFAVGALASG 89
KLLAAV---PEADAL-LVRSATTVDAEVLAA--APKLKIVAR--AGVGLDNVDVDAATAR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GIAQRKAVRPALHGSVEELFHQTADSFLVSARLSRDAEAPLDV-VRLGRAIGVVYLPAT 632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-----PQAWSDAGHLPPVLRDLVRPRIRRAAETTGAPESASALGHRLAAVDRSEWD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TVRDAEVYY-----RAMFSGRVTSWNLRDQH-MAQTLGSLLTHLDRHLDAPPARIVVWAH 523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DLSAFVLFSSAAGILGNAGQG------SYAAANGFL---DALAAHRRAR 152:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DGQAYG-FAAAFG----AGPSCEREAVEQLVDVQRNALAYARQDGLLAEDELFYAQQNAQ 469
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Madden, Kevin T.
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O'Toole, George
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Walbridge, Michael J.
                                                                                  Conservative
                                                                                                 3.5%; Score 121.5; DB 6; 22.6%; Pred. No. 0.17;
                                                                               48;
                                                                               Mismatches 174;
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                                                                               Indels 183;
                                                                                                                      Length 528;
                                                                             Gaps
87
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APPLICANT: Staffa, Alfredo
ITITLE OF INVENTION: GENE CLUSTER FOR RAMOPLANIN BIOSYNTHESIS
FILE REFERENCE: 3002-2US
CURRENT APPLICATION NUMBER: US/11/205,109
CURRENT FILING DATE: 2005-08-17
PRIOR APPLICATION NUMBER: US/9/976,059
PRIOR FILING DATE: 2001-10-15
PRIOR APPLICATION NUMBER: US 60/239,924
PRIOR PILING DATE: 2000-10-13
INUMBER OF SEQ ID NOS: 46
SOFTWARE: Patentin version 3.0
SEQ ID NO 15
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Sequence 15, Application US/11205109
Publication No. US20050287641A1
GENERAL INFORMATION:
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                                                                                                                                                                                                                                                    Matches 193;
                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                     LENGTH: 8695
TYPE: PRT
ORGANISM: Actinoplanes
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7769 EHEHAPLTTAQQASGLSGNLPLFTALFNYRHNTSPGADPSPAAGPTEGIRPVSMRERTNY 7828
                                                                               7710 VISGRODVVFGTLLL-GRFSTGADRVPGPFINTLPVRARLGGTGAAAAVAEMRRLLAELL
                                                                                                                                                                  7660 LLDVHRDG-----VGLVRQERPLDGEVVARLRA----VARRLGVSPATVMHVAWARVLG
                                         122 RRE----SAYRGERP------PTDITGKT------
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     313 RVNRYVRG--LGEDTN--ADEALSGFERFPAWMWRNTVVRDFVEWLRTRNQRYESGALRQ 368
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                                                                                                                                                                                                           31 LLAAYRDQPDVIVLGLARGGLPVAWEVAAALHAPLDAFVVRKLGA-------
                                                                                                                         76 --PGHDEFAVGALASGGRVVVNDDVVRG--LRITPQQLR-----DIAE--REGRELL 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    88 GYLVVNAPTSNIHSAAEHALALLLAASRQIAEADASLRAHIWKRSSFSG----TEIFGKT 143
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GRVVVN------DDVVRGLRITPQQLRDIAEREG--RELLRRESAYRGERPPTDITGKT 140
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                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                     3.3%; Score 115.5;
21.7%; Pred. No. 27;
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                                                                                                                                                                                                                                                      Mismatches 294;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ------RAVASDGSVVNIAGTL- 430
                                                                                                                                                                                                                                                                                             DB 7;
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            FILE REFERENCE: BGI-121CPCN
CURRENT APPLICATION NUMBER: US/11/055,822
CURRENT APPLICATION NUMBER: US/606,740
PRIOR APPLICATION NUMBER: 09/606,740
PRIOR FILING DATE: 2000-06-23
PRIOR APPLICATION NUMBER: 60/141,031
PRIOR FILING DATE: 1999-06-25
PRIOR FILING DATE: 1999-07-02
PRIOR APPLICATION NUMBER: 60/142,101
PRIOR FILING DATE: 1999-07-02
PRIOR APPLICATION NUMBER: 60/148,613
PRIOR FILING DATE: 1999-08-12
PRIOR FILING DATE: 1999-08-12
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                             APPLICANT: Haberhauer, Gregor
TITLE OF INVENTION: CORYNEBACTERIUM GLUTAMICUM GENES ENCODING
TITLE OF INVENTION: METABOLIC PATHWAY PROTEINS
                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
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APPLICANT: Kroger, Burkhard
APPLICATION NUMBER: 60/187,970
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KARGVAVTVQDIMAAPTVSELMGSLSMSSIR--DSLGTLLPIRRTGELPPL 8470
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTPGKAPAPGPLGNLEESMCQA-----FAEVLGLDSVGPDDDFFALGGHSLLAVALVQRL 842:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DGVLH----FAGRADD-QVKIRGYRVEPGEVEAVLAQHPDVSQVAVVV--REDAPGDKRL 8314
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                                                                                                                                                                                                                                                                                                                                                                                                  Schroder,
                                                                                                                                                                                                                                                                                                                                                                        Zelder, Oskar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Application US/11055822 o. US20050260707A1
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                                                                                                                                                                                                                                                                                                                                                                                             Hartwig
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; TYPE: PRT
; ORGANISM: Corynebacterium
US-11-055-822-898
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                                                                                                                ; ORGANISM: Sorangium cellulosum US-11-075-185-7
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PRIOR APPLICATION NUMBER: DE 19330476.9
PRIOR FILING DATE: 1999-07-01
PRIOR APPLICATION NUMBER: DE 19931415.2
PRIOR FILING DATE: 1999-07-08
PRIOR PRIOR APPLICATION NUMBER: DE 19931418.7
PRIOR FILING DATE: 1999-07-08
PRIOR FILING DATE: 1999-07-08
PRIOR PRIOR DATE: 1999-07-08
PRIOR FILING DATE: 1999-07-08
PRIOR FILING DATE: 1999-07-08
PRIOR FILING DATE: 1999-07-08
PRIOR FILING DATE: 1999-07-08
                                    Best Loc
Matches
                                                                                                                                                                   SOFTWARE: PatentIn version 3.3
SEQ ID NO 7
LENGTH: 3507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 7, Application US/11075185 Publication No. US20050266434A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Remaining Prior Application data removed - NUMBER OF SEQ ID NOS: 1158 SEQ ID NO 898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                          Query Match
                                                                                                                                                                                                                                                TITLE OF INVENTION: BIOSYNTHETIC GENE CLUSTER FOR AMERUTICINS FILE REPERBUCE: 01099.03
CURRENT EPLLICATION NUMBER: US/11/075,185
CURRENT FILING DATE: 2005-03-07
PRIOR APPLICATION NUMBER: US 60/551,103
PRIOR PILING DATE: 2004-03-08
PRIOR PILING DATE: 2004-03-08
PRIOR PILING DATE: 2004-03-08
PRIOR PILING DATE: 2004-05-04
                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: REEVES, APPLICANT: JULIEN APPLICANT: REID,
                                                                                                                                                                                                                                   NUMBER OF SEQ ID NOS: 61
                                                                                                                                                       TYPE: PRT
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                                    Local Similarity
nes 177; Conserv
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DQPDVIVLGLARGGLPVAWEVAAALHAPLDAFVVRKLGAPGHDEFAVGALASGGRVVVND
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JULIEN, bar
TTD, RALPH
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APGHDEFAVGALASGGRVVVN-DDVVR--GLRITPQQLRDIAEREGRELLRRESAYRGER 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RRVFRDRREAGRVLAELLAAYRDQPDVIVLGLARGGLPVAWEVAAALHAPLDAFVVRKLG
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                                      Conservative
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                                  Score 111; DB Pred. No. 16; 79; Mismatches
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Pred. No. 0.58;
32; Mismatches
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                                      244;
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                                                                          Length 3507;
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                                      Indels 322;
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Sequence 4, Application US/11075185
Publication No. US20050266434A1
GENERAL INFORMATION:
APPLICANT: REEVES, CHRISTOPHER D
APPLICANT: JULIEN, BRYAN
APPLICANT: HEID, RALPH
TITLE OF INVENTION: BIOSYNTHETIC GENE CLUSTER FOR
PILE REFERENCE: 010099.03
CURRENT APPLICATION NUMBER: US/11/075,185
CURRENT APPLICATION NUMBER: US 60/551,103
PRIOR APPLICATION NUMBER: US 60/551,103
PRIOR FILING DATE: 2004-05-04
PRIOR FILING DATE: 2004-05-04
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US-11-075-185-4
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  Sequence 47, Application US/11143980 Publication No. US20050272133A1 GENERAL INFORMATION:
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Conservative 63; Mismatches
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CURRENT APPLICATION NUMBER: US/11/143,980
CURRENT FILING DATE: 2005-06-03
PRIOR APPLICATION NUMBER: US 60/664,483
PRIOR FILING DATE: 2005-03-23
PRIOR APPLICATION NUMBER: US 60/576,895
PRIOR FILING DATE: 2004-06-03
NUMBER OF SEQ ID NOS: 72
SOFTWARE: PATENTIN VERSION 3.3
SEQ ID NO 47
LENGTH: 5712
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; ORGANISM: Streptomyces sp.
US-11-143-980-47
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APPLICANT:
APPLICANT:
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1324 VNQDGASNGLTAPN---GPSQQRVIRQALASAGLVASDVDAVEAHGTGTTLGDPIEAQAL 1380
                                                                                                                                                                                                                         410 HACADDGQAYGFAAAFGAGPSCEREAVEQLVDVQRNALAYARQDGLLAEDELFYAQQNAQ 469
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                                                                                                                                                                                                                                                        GTSYARDGGFLYDAAEF-DAGFFGI------SPREA----EAMDPQQRLLLETSWEALE 1163
                                                                                                                                                                                                                                                                                                                                                                                      AEHLHRRLHGRTDEQAAPATVÞTPD-----GGDPVVIVGMGCR-----FPGRAHSPE-- 1080
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                                                                                                                           SVASGRVSYTLGLEGPAVTVDTACSSSLVALHLAVQSLRAGECSLALAGGVTVMATPAMF 1266
                                                                                                                                                        TVRDAEVYYRAMFSG-----RVTSWNLRDQHMA-QTLG----SLLTHLDRHLDAPPARI 518
                                                                                                                                                                                           RA-----GIPAEHIKGSSTG-----VFIGASSVGYAADAGEAAEG--YQLTGTAA 1206
                                                                                                                                                                                                                                                                                       FVEWLRTRNQRYESGALRQAGFYGLDLYSLHRSIQEVISYLDKVDPRAAARARARYACFD 409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GLVDDVVCATMPTPFLAVGESFWDFRQVTDEEVRRLLATPTAGP-----SLRRPAAST 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ERPPTDITGKTVIVVDDGLATGASMFAAVQALRDAQPAQIVIAVPAA----PESTCREFA 185
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Summers, Mia
Kulowski, Kerry
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                                                                                           VVWAHNSHVG-DARATEV-----S 557
                                                                                                                                                                                                                                                                                                                                                      IEEKGFGAVAAEADWPDAYRVNRYVRGLGEDTNADEALSGFERFPAW----MWRNTVVRD 349
                              IGFSTYTGTVTAASEWGGIAQRKAVRPAL-------HGSVEELFHQ-TADSF 601
                                                             VEFSRQRGLAMDGRCKAFAAAADGTGWAEG---VGVLVVERLSDAERNGHRVLAVVRGSA 1323
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Graziani, Edmund
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, Bradley A.
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TITLE OF INVENTION: BIOSYNTHETIC GENE CLUSTER FOR AMBRUTICINS FILE REFERENCE: 0.10099.03
CURRENT APPLICATION NUMBER: US/11/075,185
CURRENT FILING DATE: 2005-03-07
PRIOR APPLICATION NUMBER: US 60/551,103
PRIOR APPLICATION NUMBER: US 60/551,103
PRIOR FILING DATE: 2004-03-08
PRIOR FILING DATE: 2004-03-08
PRIOR FILING DATE: 2004-05-04
NUMBER OF SEQ ID NOS: 61
SOFTWARE: PATENTIN VERSION 3.3
SEQ ID NO 8
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Publication No. US20050266434A1
GENERAL INFORMATION:
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TYPE: PRT
ORGANISM: Sorangium cellulosum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                   1868 SALLVIKGS-----PIFTRIGALVSHAEPGSPIBALVESCPWSKVIAVDPFGEGAAAEL 1921
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                                                                                                                                                                                                                                                                                                                                                                                                                  206 SFWDFRQVTDEEVRRLLATPTAGPSLRRPAASTAADVLRRVAIDAPGGVPTHEVLAELVG 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 LHAPLDAFVVRKLGAPG-----HDEFAV---GALASGGRVVVNDDVVRGLRI-----TPQ 107
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---ERSGYLVGVD 1970
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21.9%; Pred. No. 12;
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                                                                                                                   -VWLETLQSD---W---
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; ORGANISM: Zea mays subsp. n; FEATURE:
; NAME/KEY: misc_feature
; LOCATION: (1). (829)
; OTHER INFORMATION: Ceres Se
US-11-096-568A-20149
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TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 20149
LENGTH: 829
TYPE: PRT
               RESULT 13
US-11-096-568A-20148
; Sequence 20148, Application US/11096568A
; Publication No. US20060048240A1
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US-11-096-568A-20149
GENERAL
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Best Local
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                                                                                                                         SVVSMGGTCVRKSIAQIKDENLGQLEKPDFITVKAAISHLIADNFCYPA
                                                                                                                                                             ---EWGGIAORKA----VRPALHGSVEE-----LFHQTADSFLVSA 605
                                                                                                                                                                                                   GARVTDYSGRS-VSSAGSTQLKIDPEIPEAESLRRWYA-----TGGKTAACVSL
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                                                                                                                                                                                                                                                                         ----ETQRRTLELKD-----MSGRSVQLTLWGKLCVAEGNQLQSLCDSGLNPVLALK 430
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TQSNLQQRSLNSHPNQ-----RFAVPSMAGGSGAPGNTYGQPAQSFYQQPPPGHMNRTPV
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Pred. No. 3.7;
70; Mismatches 207;
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CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 20148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 125;
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Best Local Similarity
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TITLE OF INVENTION: Sequence-Determined DNA Fragments and Corresponding Polypeptides I
TITLE OF INVENTION: Therby
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TYPE: PRT
ORGANISM: Zea mays subsp.
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NAME/KEY: misc_feature
LOCATION: (1). (843)
OTHER INFORMATION: Ceres
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                              ---EWGGIAQRKA----VRPALHGSVEE-----LFHQTADSFLVSA
                                                                  GARVTDYSGRS-VSSAGSTQLKIDPEIPEAESLRRWYA---
                                                                                                 PARIVVWAHNSHVGDARATEVWADGQLTLGQIVRERYGDESRSIGFSTYTGTVTAAS---
                                                                                                                                     ----ETQRRTLELKD
                                                                                                                                                                    DELFYAQQNAQTVRDAEVYYRAMFSGR----VTSWNLRDQHMAQTLGSLL-THLDRHLDAP
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Pred. No. 3.8;
70; Mismatches
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US-11-096-568A-20147 Sequence 20147, Application US/11096568A Publication No. US20060048240A1 GENERAL INFORMATION:
APPLICANT: Alexandrov, Nickolai et al. TITLE OF INVENTION: Sequence-Determined DN
TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01

DNA Fragments

and Corresponding Polypeptides I

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ORGANISM: Zea mays subsp. mays;
FEATURE:
NAME/KEY: misc feature
LOCATION: (1). (876)
OTHER INFORMATION: Ceres Seq. ID no. 12377951
US-11-096-568A-20147
TITLE OF INVENTION: BIOSYNTHETIC GENE CLUSTER FO FILE REFERENCE: 010099.03
CURRENT APPLICATION NUMBER: US/11/075,185
CURRENT FILING DATE: 2005-03-07
PRIOR APPLICATION NUMBER: US 60/551,103
PRIOR FILING DATE: 2004-03-08
PRIOR FILING DATE: 2004-03-08
PRIOR PPLICATION NUMBER: US 60/568,290
PRIOR FILING DATE: 2004-05-04
NUMBER OF SEQ ID NOS: 61
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Publication No. US20050266434A1
GENERAL INFORMATION:
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SEQ ID NO 20147
LENGTH: 876
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                                                                                                                                                                    APPLICANT: REEVES,
APPLICANT: JULIEN,
APPLICANT: REID, I
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completed: March
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                                                                                                  RNALA 448
                                                                                                                                   AGPVPPLLRGLVRAPAGRRTAASAAGANGNGTG-AAALRARLSPLPGAERQKV--LLDLV 1738
                                                                                                                                                                 LDKVDP--RAAARARARYACFDHACADDGQAYGFAAAFGAG----PSCEREAVEQLVDVQ 443
                                                                                                                                                                                                    TAHLGAADIARMKRHGVVSMPVAQGLRLLDRALAQABATLVPLALDLSSLQRA----GSN
                                                                                                                                                                                                                                                                                                       QWLIEEKGFGAVAAEADWPDAYRVNRYVRGLGEDTNADEALSGFERFPAW-MWRNTVV-- 347
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                                                                                                                                                                                                                                                                                                                                                                                                                                           AVPAA-PESTCREFAGLVDDVVCATMPTPFLAVGESFWDFRQVTDEEVRRLLATPTAGPS
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                                                                                                                                                                                                                                                                                                                                        -----RPKVD--GAFHLHE-LTKHAPLAAFVLF-SSAAGT------
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| 45        | 44        | 43         | 42         | 41        | 40        | 39        | 38        | 37        | 36        | 35        | 34         | 33        | 32        | 31        | 30         | 29        | 28         | 27        | 26         | 25         |
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| 132       | 133       | 133        | 133        | 133.5     | 133.5     | 134       | 141.5     | 142       | 143       | 143       | 146.5      | 148       | 148       | 150.5     | 156        | 164.5     | 245        | 245       | 245        | 245        |
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| E. faeciu | Plant ful | Wheat pro  | Wheat sHS  | Streptoco | Streptoco | Plant ful | Polypepti | Plant pol | Propionib | Propionib | M. xanthu  | L. pneumo | L. pneumo | S. aurant | High leve  | Mycobacte | Mycobacte  | 12kD majo | M. tuberc  | M. tuberc  |

# ALIGNMENTS

RESULT 1 AAW94900

AAW94900 standard; protein; 144 AA.

11-MAY-1999 AAW94900;

(first entry)

Alpha-crystallin heat shock protein.

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Novel attenuated strains of Mycobacterium tuberculosis and M. bovis - useful in the production of a vaccine against tuberculosis, achieved l reducing or eliminating expression of the alpha-crystallin heat shock
                                                                                                                                                                                                                                                                                         Tuberculosis; Mycobacterium; alpha-crystallin heat shock protein; acr gene; attenuated; vaccine; antimycobacterial; pathogenic.
                                                                                                                                               WPI; 1999-120871/10.
N-PSDB; AAX17761.
                                                                                                                                                                                                                          09-JUL-1998;
                                                                                                                                                                        Barry CE,
                                                                                                                                                                                                        10-JUL-1997;
                                                                                                                                                                                                                                                                          Mycobacterium
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                                                                                                                                                                                                                                                          WO9902670-A1
                                                                                                                                                                                         (USSH ) US DEPT HEALTH & HUMAN SERVICES.
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The invention relates to a vaccine for protection against tuberculosis in which Mycobacterium sp. are attenuated by having the expression of the alpha-crystallin heat shock protein gene (acr gene) reduced by at least 75 percent. The attenuated strains can be used as models for screening for novel antimycobacterial agents. Also, the mixture of Mycobacterium sp. cellular debris can be used for detection of exposure to M. bovis and M. tuberculosis, used for commercial adjuvants, used as diagnostics including use as reagents for the development of monoclonal antibodies to recognize wild type mycobacteria in patient samples. The vaccine is based on M. tuberculosis and is obtained without the multitude of passages so Example; Page 25; 33pp; English. protein gene.

achieved by

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RESULT 2
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Best Local
                                                         strain H37Rv cytosolic Rv2031c gene product, designated HspX. This is one of 31 immunodominant secreted or cytosolic Mtb proteins of strain H37Rv (see AAM50729-59) discovered through the use of 2-dimensional liquid phase electrophoresis coupled with an in vitro interferon-gamma assay and liquid chromatography-mass spectrometry. The immunogens stimulate a strong interferon-gamma response from T cells of M. tuberculosis infected mice. The invention provides vaccine compositions for boosting immunity to mycobacteria when administered in mid-life to a subject who has been vaccinated neonatally or in early childhood with BCG and in whom protective immunity has waned. The vaccine compositions comprise 1 or more of the 31 purified immunogenic proteins. A preferred protein is Ag85A (see AAM50759), the secreted product of the Rv3084v gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Vaccine for boosting immunity to mycobacteria when administered in midlife in a subject who has been vaccinated in childhood with Bacillus Calmette-Guerrin, has purified proteins from mycobacterium tuberculosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     that the immune response generated is more relevant to the wild type, pathogenic bacteria. The present sequence represents the alphacrystalline heat shock protein
Sequence 144
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 8; Page 19; 61pp; English.
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                       The present invention describes polypeptides or their fragments, which CC are expressed during the latent stage of a mycobacterial infection, CC and/or nucleic acids encoding the polypeptides, which are useful for CC creating a therapeutic vaccine against tuberculosis. Also described: (1) CC a therapeutic vaccine against tuberculosis comprising one or more CC polypeptides; (2) a method for treating an animal, including a human being, with tuberculosis caused by virulent mycobacteria, e.g. by CC Mycobacterium tuberculosis, M. africanum or M. bovis; (3) a method for CC immunising an animal, including a human being, against tuberculosis CC caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis CC caused by virulent mycobacteria in an animal, including a human being; (5) a method for diagnosing previous or ongoing infection with a virulent mycobacterium; and (6) a method of diagnosing Mycobacterium tuberculosis CC infection in a subject. The polypeptides have antibacterial activities, and can be used in vaccines and in gene therapeutic vaccine for treating an individual who is infected by a virulent mycobacterium, e.g. M.
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Best Local Similarity
Matches 144; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Use of one or more polypeptides or their fragments, which are expressed during the latent stage of the mycobacterial infection, and/or nucleic acids encoding the polypeptides, for a therapeutic vaccine against
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JLT 4
74589
                                                                                                                                                                                                                                                    18-FEB-1998;
07-APR-1998;
30-DEC-1998;
          The invention relates to a purified polypeptide which induces an immune response of Mycobacterium tuberculosis. Polypeptides of the invention ar useful for diagnosing, treating or preventing M. tuberculosis infection, particularly tuberculosis infection. In particular, the polypeptides are
                                                                                    New fusion proteins of Mycobacterium tuberculosis antigens, useful diagnosing, treating or preventing M. tuberculosis infection, particularly as vaccine for treating or preventing tuberculosis.
                                                                                                                                            WPI;
                                                                                                                                                                                              (REED/)
(SKBI/)
(DILL/)
(ALDE/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      used
                                                                Claim 1;
                                                                                                                                 N-PSDB;
                                                                                                                                                                                                                                                                                                13-MAR-1997;
                                                                                                                                                                                                                                                                                                                       07-APR-1999;
                                                                                                                                                                                                                                                                                                                                            24-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                 US2002009459-A1.
                                                                                                                                                                                                                                                                                                                                                                                                Mycobacterium tuberculosis.
                                                                                                                                                                                                                                                                                                                                                                                                                     Fusion protein; tuberculosis; Mycobacterium tuberculosis; tuberculosic; immunogen; vaccine; Erd14-DPV-MTI; Erd14; DPV; MTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Antigenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29-AUG-2003
08-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAU74589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAU74589 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The
                                                                                                                                                                                     (CAMP/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    present
d in the
                                                                                                                                                                SG,
                                                                                                                                            2002-171134/22.
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                                                                                                                                                                                              REED S G.
SKEIKY Y A.
DILLON D C.
ALDERSON M.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 MATTLPVQRHPRSLFPEFSELFAAFPSFAGLRPTFDTRLMRLEDEMKEGRYEVRAELPGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                  ABK14129
                                                                                                                                                                                     CAMPOS-NETO
                                                                Fig 2; 62pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ILTVSVAVSEGKPTEKHIQIRSTN 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DPDKDVDIMVRDGQLTIKAERTEQKDFDGRSEFAYGSFVRTVSLFVGADEDDIKATYDKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ILTVSVAVSEGKPTEKHIQIRSTN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DPDKDVDIMVRDGQLTIKAERTEQKDFDGRSEFAYGSFVRTVSLPVGADEDDIKATYDKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MATTLPVORHPRSLFPEFSELFAAFPSFAGLRPTFDTRLMRLEDEMKEGRYEVRAELPGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                     fusion protein Erd14-DPV-MTI
                                                                                                                                                                Skeiky YA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence represents a low oxygen induced antigen, which exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (revised)
(first en
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Å,
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98US-00025197.
98US-00056556.
98US-00223040.
                                                                                                                                                                                                                                                                                      97US-00818112.
97US-00942578.
                                                                                                                                                                                                                                                                                                                       99US-00287849.
                                                                                                                                                                                                                                                                                                                                                                                                                    immunogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         entry)
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                                                               English.
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Pred. No. 8.1e-74;
; Mismatches 0;
                                                                                                                                                                 Alderson
                                                                                                                                                             ĭ
                                                                                                                                                                Campos-Neto
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
  polypeptides
ord long-term
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useful as a vaccine formulation with an

adjuvant to afford

This sequence represents a recombinant antigen fusion protein, termed Mtb39A,

Mycobacterium tuberculosis tri-composed of the antigens ERD14,

tri-

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protection in animals against the development of tuberculosis. The protein coding sequence may be used to encode a protein product for use as an immunogen to induce and/or enhance an immune response to M. tuberculosis. This sequence represents an M. tuberculosis fusion protein of the invention. (Updated on 29-AUG-2003 to standardise OS field)
                                                                 Claim 1; Fig 2;
                                                                                                                                     New fusion proteins useful
                                                                                                                                                                                                         WPI; 1999-601610/51.
                                                                                                                                                                                                                                                Skeiky YAW,
                                                                                                                                                                                                                                                                                                                                         07-APR-1998;
30-DEC-1998;
                                                                                                                                                                                                                                                                                                                                                                                                           07-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mycobacterium tuberculosis antigen fusion protein Mtb39A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17-JAN-2000
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                                                                                                                tuberculosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO9951748-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tuberculosis; antigen; fusion protein; Mtb39A; ERD14; DPV;
                                                                                                                                                                                                                                                                                               (CORI-) CORIXA
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                                                                                                                                                                                 AAZ20195
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    therapy; vaccine;
                                                                                                                                                                                                                                                   Alderson
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                                                                                                                                                                                                                                                                                               CORP.
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98US-00223040
                                                                                                                                                                                                                                                                                                                                                                                                           99WO-US007717
                                                                 83pp;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "DPV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note= "Met/His tag"
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                                                                                                                                                                                                                                                   Campos-Neto
                                                                                                                                       for
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Pred. No. 2.7e-73;
; Mismatches 0;
                                                                                                                                   diagnosis,
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                                                                                                                                     prevention and
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                                                                                                                                          treatment
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Best Local S
Matches 144
                                                                                                      New fusion proteins of Mycobacterium tuberculosis for diagnosing, preventing or treating tuberculosis infection or in enhancing imm responses in M. tuberculosis.
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                                                   Claim 1; SEQ ID NO 4; 135pp; English.
                                                                                                                                                                                                                                                                                                         Reed SG,
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01-OCT-1997;
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                                                                                               WPI; 199
N-PSDB;
                                                 New fusion proteins useful
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30-DEC-1998;
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DB; AAZ20204.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            standard; protein; 368 AA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                          Alderson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             antigen; fusion protein; Mtb36f; ERD14; DPV;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tuberculosis
                                                                                                                                                                                                                                                                         98US-00056556.
98US-00223040.
                                                                                                                                                                                                                                                                                                                                                    99WO-US007717
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      note=
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100.0%; Pred. No. 2.7e-73;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "DPV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "ERD14"
                                                                                                                                                                          Campos-Neto
                                              for diagnosis, prevention and treatment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 331;
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Best Local
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01-OCT-1997;
18-FEB-1998;
07-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This sequence represents a recombinant Mycobacterium tuberculosis triantigen fusion protein, termed Mtb36f, composed of the antigens ERD14, DPV and MTI. The fusion protein is expressed in host cells using a vector carrying a polynucleotide (see AAZ20204) comprising the coding sequences for the 3 antigens. The invention provides fusion proteins (see AAY32059-71) containing at least 2 M. tuberculosis antigens. The new fusion proteins and polynucleotides encoding them are useful as vaccines for preventing tuberculosis encoding them are useful as vaccines for intradermal skin tests for detection of anti-M. tuberculosis antibodies), monitoring of disease progression, and treatment of tuberculosis. They
                                  Reed
                                                                 (REED/)
(SKEI/)
(DILL/)
(ALDE/)
                                                                                                                          30-DEC-1998;
                                                                                                                                                                                           07-APR-1999;
                                                                                                                                                                                                                 24-JAN-2002.
                                                                                                                                                                                                                                       US2002009459-A1.
                                                                                                                                                                                                                                                                       Mycobacterium tuberculosis
                                                                                                                                                                                                                                                                                              tuberculostatic;
                                                                                                                                                                                                                                                                                                                              Antigenic fusion protein Erd14-DPV-MTI (Mtb36f).
                                                                                                                                                                                                                                                                                                                                                     29-AUG-2003
08-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                      AAU74598;
                                                                                                                                                                                                                                                                                                                                                                                                           AAU74598 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     are more effective
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 1;
            2002-171134/22
                                  SG,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19
                                                    ) REED S G.
) SKEIKY Y A.
) DILLON D C.
) ALDERSON M.
) CAMPOS-NETO
                                                                                                                                                                                                                                                                                                         protein; tuberculosis; Mycobacterium tuberculosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 MATTLPVQRHPRSLFPEFSELFAAFPSFAGLRPTFDTRLMRLEDEMKEGRYEVRAELPGV
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  ABK14138
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                                Skeiky YA,
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                                                                                                                                                                                                                                                                                                                                                    (revised)
(first entry)
                                                                                                                       97US-00818112.
97US-00942578.
98US-00025197.
98US-00056556.
98US-00223040.
                                                                                                                                                                                           99US-00287849.
                                                                                                                                                                                                                                                                                             immunogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
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                                  Dillon
                                                                                                                                                                                                                                                                                                                                                                                                            368
                                                                                                                                                                                                                                                                                              vaccine;
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                                  'n,
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Pred. No. 3.1e-73;
; Mismatches 0;
                                  Alderson
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                                  Σ
                                  Campos-Neto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 368;
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Best Local
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01-OCT-1997;
18-FEB-1998;
07-APR-1998;
30-DEC-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      particularly tuberculosis infection. In particular, the polypeptides are useful as a vaccine formulation with an adjuvant to afford long-term protection in animals against the development of tuberculosis. The protein coding sequence may be used to encode a protein product for use as an immunogen to induce and/or enhance an immune response to M. tuberculosis. This sequence represents an M. tuberculosis fusion protein of the invention. (Updated on 29-AUG-2003 to standardise OS field)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The invention relates to a purified polypeptide which induces an immune response of Mycobacterium tuberculosis. Polypeptides of the invention ar useful for diagnosing, treating or preventing M. tuberculosis infection, particularly tuberculosis infection. In particular, the polypeptides are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New fusion proteins of Mycobacterium tuberculosis antigens, usef diagnosing, treating or preventing M. tuberculosis infection, particularly as vaccine for treating or preventing tuberculosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 368 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 1; Fig 11;
                                                     WPI; 2003-897524/82
                                                                                                                                                                                                                                                                                                                                                                                                          05-FEB-2003; 2003US-00359460
                                                                                                                                                                                                                                                                                                                                                                                                                                                             07-AUG-2003.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US2003147911-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mycobacterium tuberculosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tuberculosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fusion protein; Mycobacterium tuberculosis antigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Fusion
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADF69775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADF69775 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                          SG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       129
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein
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                                                                                                       Skeiky YA,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      infection;
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97US-00942578.
98US-00025197.
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98US-00223040
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Pred. No. 3.1e-73;
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                                                                                                       Campos-Neto
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N-PSDB; ADF69774

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RESULT 10
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present invention relates to fusion proteins of Mycobacterium tuberculosis antigens, and the polynucleotide sequences encoding them. The sequences of the invention are useful in a method for preventing tuberculosis by administering to a subject an amount of the fusion protein or the polynucleotide that encodes the fusion protein. Also disclosed is a pharmaceutical composition comprising the fusion protein or the polynucleotide encoding it. The fusion protein induces an immune response to M. tuberculosis and can be used in the diagnosis, prevention, and treatment of tuberculosis infection. The present sequence represents a fusion protein of a M. tuberculosis antigen.
                       07-APR-1998;
30-DEC-1998;
                                                          07-APR-1999;
                                                                                                          W09951748-A2
                                                                                                                                              Protein
                                                                                                                                                                     Protein
                                                                                                                                                                                                                                                                              Mycobacterium
                                                                                                                                                                                                                                                                                                     Tuberculosis; antigen; fusion protein; Mtb46f; ERD14; DPV; diagnosis; therapy; vaccine; immunogen.
(CORI-) CORIXA
                                                                                                                                                                                             Protein
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                                                                                                                                                                                                                                          Peptide
                                                                                                                                                                                                                                                        Key
                                                                                                                                                                                                                                                                                                                                          Mycobacterium
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                                                                                                                                                                                                                                                                                                                                                                                                              AAY32065 standard; protein; 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 368
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New fusion proteins of Mycobacterium tuberculosis for diagnosing, preventing or treating tuberculosis infection or in enhancing immune responses in M. tuberculosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
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                                                                                                                                                                                                                                                                                tuberculosis.
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                      98US-00056556.
98US-00223040.
                                                          99WO-US007717
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                                                                                                                                   "ISM"
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Pred. No. 3.1e-73;
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Query Match
                                                                                    antigen fusion protein, termed Mtb46£, composed of the antigens ERD14, DPV, MTI and MSL. The fusion protein is expressed in host cells using a vector carrying a polynuclectide (see AAZ2700) comprising the coding sequences for the 4 antigens. The invention provides fusion proteins get least 2 M. tuberculosis antigens. The new fusion proteins and polynuclectides encoding them are useful as vaccines for preventing tuberculosis (claimed), for diagnosis (via in vitro assays or intradermal skin tests for detection of anti-M. tuberculosis antibodies), monitoring of disease progression, and treatment of tuberculosis. They are more effective immunogens than mixtures of the
                                      Sequence
                                                                                                                                                                                                                                                                                                              Claim 1; Fig 7A-B;
                                                                                                                                                                                                                                                                                                                                                   tuberculosis
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                                                                                                                                                                                                                                                                                                                                                                    fusion proteins useful
                                                                                                                                                                                                                                                         sequence represents a recombinant Mycobacterium tuberculosis gen fusion protein, termed Mtb46f, composed of the antigens ER
                                      433 AA;
                                                                        protein
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 Length 433;
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RESULT 11
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Fusion protein; tuberculostatic;
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08-MAY-2002
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mycobacterium
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(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tuberculosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tuberculosis; Mycobacterium tuberculosis;
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Pred. No.
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No. 3.9e-73;
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13-MAR-1997; 01-OCT-1997; 18-FEB-1998; 07-APR-1998; 30-DEC-1998;

97US-00818112. 97US-00942578. 98US-00025197. 98US-00056556. 98US-00223040.

(REED/)

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07-APR-1999; 24-JAN-2002.

99US-00287849

US2002009459-A1

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RESULT 12
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Matches 144
13-MAR-1997;
01-OCT-1997;
18-FEB-1998;
07-APR-1998;
30-DEC-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               particularly tuberculosis infection. In particular, the polypeptides are useful as a vaccine formulation with an adjuvant to afford long-term protection in animals against the development of tuberculosis. The protein coding sequence may be used to encode a protein product for use as an immunogen to induce and/or enhance an immune response to M. tuberculosis fusion protein of the invention. (Updated on 29-AUG-2003 to standardise OS field)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The invention relates to a purified polypeptide which induces an immune response of Mycobacterium tuberculosis. Polypeptides of the invention ar useful for diagnosing, treating or preventing M. tuberculosis infection,
                                                                                                                                                                                             Fusion protein; Mycobacterium tuberculosis antigen; tuberculosis infection; immune response; tuberculostatic; mutant; mutein.
                                                                                                                                                                                                                                                                                    ADF69765;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 433
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New fusion proteins of Mycobacterium tuberculosis antigens, useful for diagnosing, treating or preventing M. tuberculosis infection, particularly as vaccine for treating or preventing tuberculosis.
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(DILL/)
(ALDE/)
(CAMP/)
                                                                             05-FEB-2003;
                                                                                                       07-AUG-2003
                                                                                                                              US2003147911-A1
                                                                                                                                                       Mycobacterium tuberculosis
                                                                                                                                                                                                                                    Fusion
                                                                                                                                                                                                                                                                                                             ADF69765 standard; protein;
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                                                                                                                                                                                                                                 protein
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DILLON D C.
ALDERSON M.
CAMPOS-NETO
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                                                                            2003US-00359460.
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97US-00818112.
97US-00942578.
98US-00025197.
98US-00056556.
98US-00223040.
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Pred. No. 3.9e-73;
; Mismatches 0;
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Matches 144
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                                                                                                                                                                                                                                                      Mycobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New fusion proteins of Mycobacterium tuberculosis for diagnosing, preventing or treating tuberculosis infection or in enhancing immune
               Proteir
                                       Protein
                                                                 Protein
                                                                                          Protein
                                                                                                                    Protein
                                                                                                                                                                                    Mycobacterium
                                                                                                                                                                                                           Tuberculosis; antigen; fusion protein; Mtb88f; mTCC2; diagnosis; therapy; vaccine; immunogen.
                                                                                                                                                                                                                                                                              17-JAN-2000
                                                                                                                                                                                                                                                                                                                                 AAY32064 standard; protein; 856
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                                                                                                                                             Peptide
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                                                                                                                                                                                     tuberculosis.
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                                      239. .332
/note= "MTI"
335. .431
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  /note= "mTTC2
                          note= "MSL"
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Pred. No. 3.9e-73;
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antigen fusion protein, termed Mtb88f, composed of the antigens ERD14,
DPV, MTI, MSL and mTTC2. The fusion protein is expressed in host cells
using a vector carrying a polynucleotide (see AAZ2019) comprising the
coding sequences for the 5 antigens. The invention provides fusion
proteins (see AAX2059-71) containing at least 2 M. tuberculosis
antigens. The new fusion proteins and polynucleotides encoding them are
useful as vaccines for preventing tuberculosis (claimed), for diagnosis
(via in vitro assays or intradermal skin tests for detection of anti-M.
tuberculosis antibodies), monitoring of disease progression, and
treatment of tuberculosis. They are more effective immunogens than
mixtures of the individual protein components
                                                                                                                                                                                                                     Fusion
  07-AUG-2003
                                                                                                                                        Synthetic.
                                                                                                                                                                                                                                                                           Fusion protein #6 of M. tuberculosis antigen.
                                                        US2003147911-A1.
                                                                                                                                                                                           tuberculosis
                                                                                                                                                                                                                                                                                                                                   12-FEB-2004
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                                                                                                              Mycobacterium tuberculosis
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30-DEC-1998;
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98US-00223040.
                                                                                                                                                                                                                     Mycobacterium tuberculosis antigen;
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08-MAY-2002
                                                                                                                                                                                                               AAU74593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present invention relates to fusion proteins of Mycobacterium tuberculosis antigens, and the polynucleotide sequences encoding them. The sequences of the invention are useful in a method for preventing tuberculosis by administering to a subject an amount of the fusion protein or the polynucleotide that encodes the fusion protein. Also disclosed is a pharmaceutical composition comprising the fusion protein or the polynucleotide sequence encoding it. The fusion protein induces an immune response to M. tuberculosis and can be used in the diagnosis, prevention, and treatment of tuberculosis infection. The present sequence represents a fusion protein of a M. tuberculosis antigen.
                 Misc-difference
                                                                      Mycobacterium
                                                                                                 tuberculostatic;
                                                                                                              Fusion.
                                                                                                                                       Antigenic fusion protein Erd14-DPV-MTI-MSL-MTCC2 (Mtb88f).
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07-APR-1999;
                                                        Chimeric.
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07-APR-1998;
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01-OCT-1997;
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                                                                      tuberculosis
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98US-00025197.
98US-00056556.
              Location/Qualifiers
                                                                                                tuberculosis; Mycobacterium tuberculosis;
; immunogen; vaccine; Mtb88f; Erd14-DPV-MT
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01-OCT-1997;
18-FEB-1998;
07-APR-1998;
30-DEC-1998;
                                                                                                                                                                                                                                                                                                               The invention relates to a purified polypeptide which induces an immune response of Mycobacterium tuberculosis. Polypeptides of the invention are useful for diagnosing, treating or preventing M. tuberculosis infection, particularly tuberculosis infection. In particular, the polypeptides are useful as a vaccine formulation with an adjuvant to afford long-term protection in animals against the development of tuberculosis. The protein coding sequence may be used to encode a protein product for use as an immunogen to induce and/or enhance an immune response to M. tuberculosis. This sequence represents an M. tuberculosis fusion protein of the invention. (Updated on 29-AUG-2003 to standardise OS field)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New fusion proteins of Mycobacterium tuberculosis antigens, useful diagnosing, treating or preventing M. tuberculosis infection, particularly as vaccine for treating or preventing tuberculosis.
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                                                                                                                                                                                                                                                                                        Sequence 859
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DB; ABK14133.
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                                                       ILTVSVAVSEGKPTEKHIQIRSTN 152
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736
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Database : PIR\_80:\*
1: pir1:\*
2: pir2:\*
3: pir3:\*
4: pir4:\* Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

# SUMMARIES

| 29                 | 28                 | 27                 | 26                 | 25                 | 24                 | 23                 | 22     | 21                 | 20     | 19                 | 18                 | 17                 | 16                 | 15                 | 14                 | 13                 | 12                 | 11                 | 10     | 9                  | 8      | 7                  | 6       | IJ        | 4.     | ω      | N      | 1      | No.         | Result |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------|--------------------|--------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------|--------------------|--------|--------------------|---------|-----------|--------|--------|--------|--------|-------------|--------|
| 128                | 128                | 128                | 129.5              | 130                | 130                | 130.5              | 131    | 131.5              | 131.5  | 132                | 132                | 132                | 133                | 133                | 136                | 136.5              | •                  | 137.5              | 139    | 140.5              | 148    | 150.5              | 151     |           | 156    | 164.5  | 184.5  | 736    | Score       |        |
| 17.4               | 17.4               | 17.4               | 7                  | 17.7               | 7                  | 7.                 | 7.     | 7.                 | 17.9   | 7.                 | •                  | 7.                 | 18.1               | 18.1               | <b>.</b>           | 18.5               | 8                  | 18.7               | 8      | 19.1               | 20.1   | 0                  |         | ۲         | 21.2   | 22.4   | 25.1   | 100.0  | Match       | Query  |
| 156                | 153                | 152                | 150                | 210                | 151                | 159                | 149    | 160                | 150    | 229                | 214                | 147                | 182                | 151                | 159                | 157                | 152                | 142                | 160    | 151                | 140    | 188                | 168     | 143       | 146    | 159    | 175    | 144    | Length      |        |
| N                  | N                  | N                  | N                  | N                  | _                  | ۲                  | N      | N                  | N      | N                  | N                  | N                  | N                  | N                  | N                  | N                  | 2                  | N                  | N      | N                  | N      | N                  | N       | N         | N      | N      | N      | ν      | B           |        |
| 871566             | S23529             | 823212             | AF1842             | T09611             | HHWT17             | CYPZ79             | T04171 | T05740             | S72545 | S58210             | S45465             | D72385             | A75436             | S21600             | S72544             | 804939             | S72546             | T46658             | F82582 | T05739             | B69496 | A49942             | F95941  | T40376    | S74956 | G70939 | E95337 | F70942 | ID          |        |
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# ALIGNMENTS

| Query Match  100.0%; Score 736; DB 2; Length 144; Best Local Similarity 100.0%; Pred. No. 4.8e-60; Matches 144; Conservative 0; Mismatches 0; Indels 0; Gaps Matches 144; Conservative 0; Mismatches 0; Indels 0; Gaps Qy 1 MATTLPVQRHPRSLFPEFSELFAAFPSFAGLRPTFDTRLMRLEDEMKEGRYEVRAELPGV | A;Molecule type: protein A;Residues: 2-144 <lee> A;Cross-references: UNIPARC:UPI0000124E06 A;Experimental source: strain Erdman C;Genetics: A;Genetics: A;Gene: hspX C;Superfamily: alpha-crystallin-related small heat shock prot C;Keywords: membrane protein; surface antigen</lee> | <pre>k;Lee, B.Y.; Herta, S.A.; Brennan, F.U. Infect. Immun. 60, 2066-2074, 1992 A;Title: Characterization of the major membrane protein of vi A;Reference number: A43823; MUID:92225631; PMID:1563797 A;Accession: A43823</pre> | A;Status: preliminary A;Status: preliminary A;Molecule type: DNA A;Molecule type: DNA A;Residues: 1-144 <ver> A;Residues: 1-144 <ver> A;Cross-references: UNIPARC:UPI000004A4BF; GB:S79751; NID:g244561; PIDN:AAB21317.1; A;Cross-references: UNIPARC:UPI000004A4BF; GB:S79751; NCBIP:79752) A;Note: sequence extracted from NCBI backbone (NCBIN:79751, NCBIP:79752)</ver></ver> | OL> UNIPROT:P30223; UNIPARC:UPI000004A4BF; UNIPROT:B1023; UNIPARC:UPI000004A4BF; esrl, R.A.; Schuitema, A.; Kolk, A.H.; esrl, R.A.; Schuitema of Kolk, A.H.; 352-1359, 1992 molecular-weight antigen of Mycobacter molecular-weight antigen of Mycobacter A42851; MUID:92138631; PMID:1370952 | A;Authors: Sqares, R.; Sulston, J.B.; Taylor, K.; Whitehead, S.; Barrell, B.G. A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete A;Reference number: A70500; MUID:98295987; PMID:9634230 A;Accession: F70942 A;Status: preliminary; nucleic acid sequence not shown; translation not shown A;Molecule type: DNA | RESULT 1  Probable hspX protein - Mycobacterium tuberculosis (strain H37RV)  Probable hspX protein - Mycobacterium tuberculosis (strain H37RV)  N;Alternate names: 14K antigen; 19K major membrane protein  C;Species: Mycobacterium tuberculosis  C;Date: 17-Jul-1998 #sequence revision 17-Jul-1998 #text_change 09-Jul-2004  C;Accession: F70942; A42651; A43823  C;Accession: F70942; A42651; A43823  R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, ; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S.  Natura 103 8 37.544 |
|--|--|---|---|---|--|--|
| 2; Length 144; 60; 0; Indels 0; Gaps 0; 0; Indels 0; Gaps 0;   | shock protein  | otein of virulent Mycobacterium tubercı<br>63797  | 51; NID:g244561; PIDN:AAB21317.1; PID:(<br>IN:79751, NCBIP:79752)   | 004A4BF; GB:AL021899; GB:AL123456; NID<br>k, A.H.; Young, D.B.; Lathigra, R.<br>cobacterium tuberculosis is related to<br>70952   | Whitehead, S.; Barrell, B.G.<br>tuberculosis from the complete genome :<br>34230<br>hown; translation not shown  | (strain H37RV) protein  #text_change 09-Jul-2004  ; Churcher, C.; Harris, D.; Gordon, S.; Gentles, S.; Hamlin, N.; Holroyd, S.; K.; Skelton, S.; Squares, S.   |

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R; Barnett, M.J.; Fisher, R.F.; Jones, T.; Komp, C.; Abola, A.; Kalman, S.; Keating, D.H.; Palm, C.; Peck, M.C.; Surzycki Proc. Natl. Acad. Sci. U.S.A. 98, 9883-9888, 2001
A; Title: Nucleotide sequence and predicted functions of the A; Reference number: A95262; MUID:21396509; PMID:11481432
A; Accession: E95337
A;Status: p
A;Molecule
                                        probable hsp protein - Mycobacterium tuberculosis (strain H37RV)

(;Species: Mycobacterium tuberculosis

(;Cpecies: Mycobacterium tuberculosis

(;Accession: G7093)

R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Go

R;Cole, S.T.; Brosch, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holr

Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S.

Nature 393, 537-544, 1998

A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G.

A;Authors: Deciphering the biology of Mycobacterium tuberculosis from the complete

A;Reference number: A70500; MUID:98295987; PMID:9634230

A;Accession: G70939
                                                                                                                                                                                                                                                                                                                        RESULT
G70939
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A; Residues: 1-175 < KUR>
A; Residues: 1-175 < KUR>
A; Cross-references: UNIPROT:Q92Z87; UNIPARC:UPI0000CB14C; GB:AE006469; PIDN:AAK65263.1;
A; Cross-references: UNIPROT:Q92Z87; UNIPARC:UPI0000CB14C; GB:AE006469; PIDN:AAK65263.1;
A; Experimental source: strain 1021, megaplasmid pSyma
A; Experimental source: strain 1021, megaplasmid pSyma
A; Experimental source: strain 1021, megaplasmid pSyma
A; Athora: K; Jones, T.
L; Hyman, R, W; Jones, T.
Science 293, 668-672, 2001
A; Authors: Kahn, D.; Kahn, M.L.; Kalman, S.; Keating, D.H.; Kiss, E.; Komp, C.; Lelaure, hebault, P.; Vandenbol, M.; Vorholter, F.J.; Weidner, S.; Wells, D.H.; Wong, K.; Yeh, K.
A; Title: The composite genome of the legume symbiont Sinorhizobium meliloti.
A; Reference number: A96039; MUID:21368234; PMID:11474104
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                       Status: preliminary; nucleic acid sequence
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Best Local
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Surzycki, R.;
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; Wells, D.H.;
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A;Cross-references: UNIPROT:014368; UNIPARC:UPI000012CBFD; A;Experimental source: strain 972h-; cosmid c3E7 R;Lenaers, G.; Perret, E.; Dumont, X.; Picard, A.; Caput, I
                                                                                                                                                            heat shock protein 16 - fission yeast (Schizosaccharomyces pombe)
c;Species: Schizosaccharomyces pombe
C;Date: 03-Dec1999 #sequence revision
C;Accession: T40376; T43371; T43377
R;Lyne, M.; Wood, V.; Rajandream, M.A.; Barrell, B.G.; Brown, D.; Churcher, submitted to the EMBL Data Library, May 1998
A;Reference number: Z21924
                                                                                                                                                                                                                                                                                                                        RESULT
T40376
                                                                    A; Molecule type: DNA
A; Residues: 1-143 < LYN>
                                                                                                                                         A; Reference number: A; Accession: T40376
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C;Species: Synechocystis sp.

A;Variety: PCC 6803
C;Date: 25-Apr-1997 #sequence_revision 25-Apr-1997 #text_change 09-Jul-2004
C;Accession: S74956
R;Kaneko, T.; Sato, S.; Kotani, H.; Tanaka, A.; Asamizu, E.; Nakamura, Y.;
R;Kaneko, T.; Sato, S.; Kotani, H.; Tanaka, T.; Watanabe, A.; Yamad
O, K.; Okumura, S.; Shimpo, S.; Takeuchi, C.; Wada, T.; Watanabe, A.; Yamad
DNA Res. 3, 109-13, 1996
A;Title: Sequence analysis of the genome of the unicellular cyanobacterium
                                                                                                                                                                                                                                                                                                                                  A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-146 <KAN>
A;Cross-references: UNIPROT:P72977; UNIPARC:UPI0000D3495; EMBL:D90902; GB:AB001339;
A;Cross-references: UNIPROT:P72977; UNIPARC:UPI0000D3495; EMBL Data Library, June 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Residues: 1-159 <COL>
A;Cross-references: UNIPROT:O53673; UNIPARC:UPI00000D5F0F; GB:AL021929; GB:AL123456;
A;Experimental source: strain H37Rv
C;Genetics:
C;Genetics:
A;Gene: hsp
C;Superfamily: alpha-crystallin-related small heat shock protein
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N;Alternate names: protein sll1514
                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Status: nucleic acid sequence not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Reference number: S74322; MUID:97061201; PMID:8905231
                                                                                                                                                                                                                                                                           ;Superfamily: alpha-crystallin-related small
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VPGAIQNTEVKANYDAGILTLTLPKVEEAKNKVVKVQL
                                          LPVGADEDDIKATYDKGILTVSV-AVSEGKPTEKHIQI 140
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                                                                                        EGRYEVRAELPGVDPDKDVDIMVRDGQLTIKAERTE----QKDFDGRSEFAYGSFVRTVS
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                                                                                                                                                                                20; Mismatches
                                                                                                                                                                                                        Score 156;
Pred. No. 3.
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Pred. No. 6.0
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                                                                                                                                                                                                                                                                             heat shock protein
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A.; Yamada,
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da, M.; Yasuda,
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from GB/EMBL/DDB

EMBL: AL023534;

PIDN: CAA19006.1

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C; Genetics:
A; Gene: hsp16; SPBC3E7.02c
A; Map position: 2
A; Note: probably regulated ha; Note: probably regulated ha; Superfamily: alpha-crystal C; Superfamily: alpha-crystal C; Keywords: molecular chapes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    probable small heat shock protein, hsp20 family [imported] - Sinorhizobium meliloti (str C;Species: Sinorhizobium meliloti (str C;Date: 24-Aug-2001 #sequence_revision 24-Aug-2001 #text_change 09-Jul-2004 C;Accession: F95941 R;Finan, T.M.; Weidner, S.; Wong, K.; Buhrmester, J.; Chain, P.; Vorholter, F.J.; Hernan Proc. Natl. Acad. Sci. U.S.A. 98, 9889-9894, 2001 A;Title: The complete sequence of the 1,689-9894, 2001 A;Reference number: A95842; MUID:21396508; PMID:11481431 A;Accession: F95941
                                                                                                                                                                 A;Cross-references: UNIPROT:Q92VB0; UNIPARC:UPI00000CB671; GB:AL591985; PIDN:CAC49198.1; A;Experimental source: strain 1021, megaplasmid pSymB R;Galibert, F.; Finan, T.M.; Long, S.R.; Publer, A.; Abola, P.; Ampe, F.; Barloy-Hubler, pela, D.; Chain, P.; Cowie, A.; Davis, R.W.; Dreano, S.; Federspiel, N.A.; Fisher, R.F.; L.; Hyman, R.W.; Jones, T. Science 293, 668-672, 2001
Science 293, 668-672, 2001
A;Authors: Kahn, D.; Kahn, M.L.; Kalman, S.; Keating, D.H.; Kiss, B.; Komp, C.; Lelaure, hebault, P.; Vandenbol, M.; Vorholter, F.J.; Weidner, S.; Wells, D.H.; Wong, K.; Yeh, K. A;Title: The composite genome of the legume symbiont Sinorhizobium meliloti.
A;Reference number: A96039; MUID:21368234; PMID:11474104
                       A;Gene: SMb21294
A;Genome: plasmid
A;Superfamily: alpha-crystallin-related small
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A;Residues: 1-143 <DAN>
A;Cross-references: UNIPARC:UPI000012CBFD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Title: Ras-mediated signaling pathway regulates the ex
A;Reference number: Z22465; MUID:99384015; PMID:10452954
A;Accession: T43377
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Gene 236, 347-352, 1999
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A,Experimental source: strain 972 h(-)
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A;Description: Hsp16, a major fission yeast heat shock protein homologous to the budding
A;Reference number: Z22458
A;Accession: T43371
                                                                                                                                               A; Contents: annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: DNA
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                                                                                                                                                                                                                                                                                                                                                                                                                       A;Residues: 1-168 <KUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;Note: probably regulated by a ras-mediated signaling pathway, but;Superfamily: alpha-crystallin-related small heat shock protein;Keywords: molecular chaperone
Query Match
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Local Similarity 32.2%;
                                                                                              SMb21294
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Pred. No. 3.9e-07;
  Score
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151;
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B
                                              heat shock protein
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<u>ب</u>
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Length 168
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C;Species: Stigmatella aurantiaca C;Date: 11-Nov-1994 #sequence revision 11-Nov-1994 #text C;Date: 11-Nov-1994 #sequence C;Accession: A49942; S27669 R;Heidelbach, M.; Skladny, H.; Schairer, H.U. J. Bacteriol. 175, 7479-7482, 1993 A;Title: Heat shock and development induce synthesis of A;Reference number: A49942; MUID:94042926; PMID:8226695 A;Accession: A49942
                                                                                                                                                                                                                                                                                                                                    A;Gene: hspA
C;Superfamily: alpha-crystallin-related small heat shock protein
                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: UNIPROT:Q06823; UNIPARC:UPI0000135D57; GB:M94510; NID:g152657; PIDN:
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: DNA
A; Residues: 1-188 <HEI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Status: preliminary
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                                                                                                                                                                                                                                                                                      Local Similarity
135
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                                                                                      76
                                                                                                                             62 PDKDVDIMVRDGQLTIKAERTEQKDFDGRSEFAY----GSFVRTVSLPVGADEDDIKATY 117
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                                         DKGILTVSV------AVSEGKPTEKHIQ 139
KNGVLTLTLPKRPEVQPKRIQVASSGTEQKEHIK 168
                                                                                                                                                                                                                      FPEFSEL----FAAFPSFAGLR-----PTFDTRLMRLEDEMKEGRYEVRAELPGVD
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                                                                                      -EKDIEVTLTGDRVSVSGKREREKREESERFYAYERTFGSFSRAFTLPEGVDGDNVRADL 134
                                                                                                                                                                           FQQMQELMNWDPFELANHPWFANRQGPPAFVPAFEVR-----ETKEA-YIFKADLPGVD
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                                                                                                                                                                                                                                                             ; Score 150.5; DB 2
; Pred. No. 1.5e-06;
29; Mismatches 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26;
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                                                                                                                                                                                                                                                                                                        DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #text_change
                                                                                                                                                                                                                                                                                                        Length 188;
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small heat shock protein (hsp20-2) homolog - Archaeoglobus fulgidus C;Species: Archaeoglobus fulgidus C;Species: Archaeoglobus fulgidus C;Date: 05-Dec-1997 #sequence\_revision 05-Dec-1997 #text\_change 09-Jul-2004 C;Accession: B69496
R;Klenk, H.P.; Clayton, R.A.; Tomb, J.F.; White, O.; Nelson, K.E.; Ketchum, K.A.; D.R;Fleischmann, R.D.; Ouackenbush, J.; Lee, N.H.; Sutton, G.G.; Gill, S.; Kirkness, Glodek, A.; Zhou, L.; Overbeek, R.; Gocayne, J.D.; Weidman, J.F.; McDonald, L. Nature 390, 364-370, 1997 Dodson, s, E.F.,

Nature 390, 364-370, 1997
A;Authors: Utterback, T.; Cotton, M.D.; Spriggs, T.; Artiach, P. Smith, H.O.; Woese, C.R.; Venter, J.C.
A;Title: The complete genome sequence of the hyperthermophilic, A;Reference number: A69250; MUID:98049343; PMID:9389475
A;Accession: B69496 sulfate-reducing

P.; Kaine, B.P.; Sykes,

S

not

A;Status: preliminary; nucleic acid sequence not shown; translation

A;Molecule type: DNA
A;Residues: 1-140 <KLE>
A;Residues: 1-140 <KLE>
A;Cross-references: UNIPROT:028308; UNIPARC:UPI0000056B10; GB:AE000967;
C;Superfamily: alpha-crystallin-related small heat shock protein GB: AE000782; NID

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C;Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 09-Jul-2004 C;Accession: F82582 R;anonymous, The Xylella fastidiosa Consortium of the Organization for Nucleotide Nature 406, 151-157, 2000 A;Title: The genome sequence of the plant pathogen Xylella fastidiosa. A;Reference number: A82515, MUID:20365717; PMID:10910347 A;Reference number: A82515, MUID:20365717; PMID:10910347 A;Rote: for a complete list of authors see reference number A59328 below A;Accession: F82582
                                          A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-160 <SIM>
A; Experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Accession: T05739
R;Marmiroli, N.; Pavesi, A.; di Cola, G.; Hartings, H.; Raho, G.; Conte, M.R.;
Genome 36, 1111-1118, 1993
                                                                                                                                                                                                                                                                                            low molecular weight heat shock protein XF2234 [imported] - Xylella fastidiosa C_\ellSpecies: Xylella fastidiosa
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Title: Identification, characterization and analysis of cDNA and genomic sequences end A;Reference number: Z15446; MUID:94156165; PMID:8112573
A;Accession: T05739
A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       probable heat shock protein
C;Species: Hordeum vulgare (
C;Date: 09-Apr-1999 #sequenc
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Best Local S
Matches 50
  ;Cross-references: UNIPROT:Q9PBBO;
;Experimental source: strain 9a5c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  robable heat shock protein 17 - barley
;Species: Hordeum vulgare (barley)
;Date: 09-Apr-1999 #sequence_revision 09-Apr-1999 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query
Best L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Superfamily: alpha-crystallin-related small heat shock Keywords: heat shock; stress-induced protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MSIVRRSNVLDP-FADLWADPLDTFRSIFPAISGGNSETAVRERRM--DWKGRRLEAHVF 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -EITIPKLKKDRKAVQI 139
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llarity 32.8%;
Conservative ;
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                       UNIPARC: UPI00000C299B; GB:AE004036; GB:AE003849;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
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RESULT S72546

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C;Accession: T46658
R;Michelini, E.T.; Flynn, G.C.
submitted to the EMBL Data Library,
A;Description: The unique chaperone
A;Reference number: Z23119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
T46658
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A;Authors: Ferreira, V.C.A.; Ferro, J.A.; Fraga, J.S.; Franca, S.C.; Franco, M.C.; Frohme J.D.; Junqueira, M.L.; Kemper, E.L.; Kitajima, J.P.; Krieger, J.E.; Kuramae, E.E.; Laigre chado, M.A.; Madeira, A.M.B.N.; Madeira, H.M.F.; Marino, C.L.; Marques, M.V.; Martins, E.A.; Authors: Martins, E.M.F.; Macukuma, A.Y.; Menck, C.F.M.; Miracca, E.C.; Miyaki, C.Y.; F.G.; Nunes, L.R.; Oliveira, M.A.; de Oliveira, M.C.; de Oliveira, R.C.; Palmieri, D.A. Rodrigues, V.; Rosa, A.J. de M.; de Rosa Jr., V.E.; de Sa, R.G.; Santelli, R. V.; Sawasaki A;Authors: da Silva, A.C.R.; da Silva, F.R.; da Silva, A.M.; Silva Jr., W.A.; da Silvaira, A;Reference number: A59328
                                                                                                                                                                                                                                                                                                                                                                                    A;Gene: shap C;Function:
C;Function:
A;Description: molecular chaperone [validated, MUID:99328968]
A;Description: alpha-crystallin-related small heat shock prot
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A;Experimental source: DSM 3109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Variety: DSM 3109
C;Date: 18-Feb-2000 #sequence_revision 18-Feb-2000 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  small heat shock protein [validated] -
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C, Superfamily: alpha-crystallin-related small heat shock protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: DNA
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Best Local :
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Best Local Similarity
122
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                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                          DIMVRDGQLTIKAERTEQKDFDGRS----EFAYGSFVRTVSLPVGADEDDIKATYDKGIL
TIRVPKKEER-KKKVIEV
                                          TVSVAVSEGKPTEKHIQI 140
                                                                                             QITVEENILKISGEKKLEREQKGKNYYYVERSAGKFERAIRLPDYVDVEKIKAEYKNGVL
                                                                                                                                                                                                                                       VORHPRSLEPEESELFAAFPSFAGLRPTFDTRLMRLEDEMKEGRYEVRAELPGVDPDKDV
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                                                                                                                                                                                                                                                                                                                18.7%;
29.7%;
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; Pred. No. 1.4e-05;
24; Mismatches 40
                                                                                                                                                                                                                                                                                          Score 137.5; 1
Pred. No. 1.7e
25; Mismatches
138
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              November 1998 operon of Thermotoga maritima: cloning
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hes 53;
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heat shock 22K protein - Chlamydomonas reinhardtii
(;Species: Chlamydomonas reinhardtii
C;Species: Chlamydomonas reinhardtii
C;Date: 28-Feb-1990 #sequence_revision 28-Feb-1990 #text_change 09-Jul-2004
C;Accession: $04939
C;Accession: $04939
R;Grimm, B.; Ish-Shalom, D.; Even, D.; Glaczinski, H.; Ottersbach, P.; Ohad, I.; Kloppst Bur. J. Biochem. 182, 539-546, 1989
A;Title: The nuclear-coded chloroplast 22-kDa heat-shock protein of Chlamydomonas. Evide
A;Reference number: $04939; MUID:89325298; PMID:2473899
A;Accession: $04939
                                                                 heat shock protein 17.9 - pearl millet C;Species: Pennisetum americanum (pearl C;Date: 01-May-1998 #sequence_revision (C;Accession: 572544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        heat shock protein 17.0 - pearl millet
C;Species: Pennisetum americanum (pearl millet)
C;Date: 14-Apr-1998 #sequence_revision 15-May-1
C;Accession: S72546
                            R;Cavan, G.P.; Skoet, K.; Stevens, M.J.; Howarth, C.J. plant Mol. Biol. 30, 1075b, 1996
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A;Residues: 1-157 <GRI>
A;Cross-references: UNIPROT:P12811; UNIPARC:UP1000012CC15; EMBL:X15053; NID:g18151; PIDN
C;Superfamily: alpha-crystallin-related small heat shock protein
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A; Title: Sequence announcement
                                                                                                                                                                                                                       RESULT 14
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14 LFPEFSELFAAFPSFAGLRPTFDTRLM----RLEDEMKEGRYEVRAELPGVDPDKDVDIMV 70
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18.5%; Score 136.5; DB 2; 38.8%; Pred. No. 2.3e-05; tive 14; Mismatches 37;
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heat shock protein 16.9B - wheat
C;Species: Triticum aestivum (common wheat)
C;Species: Oun-1994 #sequence_revision 12-May-1995 #text_change 09-Jul-2004
C;Accession: S21600
R;Weng, J.; Wang, Z.F.; Nguyen, H.T.
submitted to the EMBL Data Library, February 1992
A;Description: Cloning and characterization of cytoplasmic LMW HSP genes from A;Reference number: S21600
A;Reference number: S21600
A;Accession: S21600
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C;Superfamily: alpha-crystallin-related small heat shock protein
C;Keywords: heat shock; stress-induced protein
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A; Accession: S72544
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NGVLTVTVPKAEVKKPEVKAIQI 149
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                                                       KGILTVSVAVSE-GKPTEKHIQI 140
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                                                                                                                 - EVKVEVEDGNVLVVSGERTKEKEDKNDKWHRVERSSGKFVRRFRLLEDAKVEEVKAGLE 126
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Pred. No. 4.6e-05;
19; Mismatches 53;
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Pred. No. 2.6e-05;
21; Mismatches 53
                                                                                                                                                                                                                                                                                                                                                                                              Length 151;
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Perfect score:
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Maximum Match 100%
Listing first 45 summaries
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      2166443 seqs, 705528306 residues
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUCLEOTIDE SEQUENCE (LARGE SCALE GENO)
STRAIN-CDC 1551 / OBhkosh;
MEDLINE=22206494; Pubmdd=12218036;
DOI=10.1128/JB.184.19.5479-5490.2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN-Erdmann, and H37Rv;
MEDLINE-92138631; PubMed=1370952;
Verbon A., Hartskeerl R.A., Schultema
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01-JUL-1993 (Rel. 26, Last sequence update)
10-MAY-2005 (Rel. 47, Last annotation update)
14 kDa antigen (16 kDa antigen) (HSP 16.3).
Name=hspX; OrderedLocusNames=Rv2031c, MT2090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "The 14,000-molecular-weight antigen of Mycobacterium tuberculosis related to the alpha-crystallin family of low-molecular-weight hear shock proteins.";
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                                                                                                                     "Whole-genome comparison
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=H37Rv;
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RESULT 3
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ID Q8KY85 M
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Shamputa I.C., Bastian I., F
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EMBL; M76712; AAA25342.1; -; Genomic_DNA.
EMBL; BX842578; CAA17245.1; -; Genomic_DNA.
EMBL; AE007059; AAK46369.1; -; Genomic_DNA.
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01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium.
                                                                                                                                                                                   Shamputa I.C., Bastian I., F
Submitted (APR-2000) to the
-!- SIMILARITY: Belongs to t
family.
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                                 InterPro; IPR002068; Hsp20. Pfam; PF00011; HSP20; 1. PROSITE; PS01031; HSP20; 1.
                                                                                                                                              EMBL; AF253459; AAM69221.1; -; Genomic_DNA
                                                                                                                                                                                                                                                                                                                                  STRAIN=M4199;
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Shamputa I.C., Bastian I.,
Submitted (APR-2000) to the
-!- SIMILARITY: Belongs to
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium.
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01-OCT-2002 (TYEMBLYE1. 22, Last sequence update)
01-OCT-2003 (TYEMBLYE1. 25, Last annotation update)
Alpha-crystallin protein (Fragment).
                                                         Bacteria; Actinobacteria; Actinobacte
Corynebacterineae; Mycobacteriaceae;
NCBI TaxID=141349;
                                                                                                                                 Mycobacterium lentiflavum.
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STRAIN=M96-1701;
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Submitted (APR-2000) to the
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium.
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01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Alpha-crystallin protein (Fracment)
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Submitted (APR-2000) to the EMB
-!- SIMILARITY: Belongs to the
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01-OCT-2002 (TrEMBLrel. 22,
01-OCT-2003 (TrEMBLrel. 25,
Alpha-crystallin protein (F
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium.
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InterPro; IPR002068; Hsp20.
Pfam; PF00011; HSP20; 1.
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Submitted (APR-2000) to the
-I- SIMILARITY: Belongs to t
family.
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NCBI_TaxID=28045;
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DGRSEFAYGSFVRTVSLPVGADEDDV
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                                     DGRSEFAYGSFVRTVSLPVGADEDDI 113
                                                                             FAGLRPTFDTRLMRLEDEMKEGRYEVRAELPGVDPDKDVDIMVRDGQLTIKAERTEQKDF
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86 AA;
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e EMBL/GenBank/DDBJ databases
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Pred. No. 1.9e-32;
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Pred. No. 2.4e-32;
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CK69_MYCFO

QBKY69_MYCFO PRELIMINARY;
QBKY69;
QBCT-2002 (TrEMBLrel. 22
01-OCT-2002 (TrEMBLrel. 22
01-OCT-2003 (TrEMBLrel. 25
01-CCT-2003 (TrEMBLrel. 25
Napha-crystallin protein (
                                                                                                                Pfam; PFO PROSITE;
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium;
Mycobacterium avium complex (MAC).
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Shamputa I.C., Bastian I
Submitted (APR-2000) to
-!- SIMILARITY: Belongs
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01-OCT-2002 (TrEMBLrel.
01-OCT-2003 (TrEMBLrel.
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NCBI_TaxID=1766;
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Q8KY75;
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  Local Similarity
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Score 434; DB 2;
Pred. No. 1e-31;
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium.
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SEQUENCE
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01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
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Shamputa I.C., Bastian I
Submitted (APR-2000) to
-!- SIMILARITY: Belongs
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                                                         Shamputa I.C., Bastian I Submitted (APR-2000) to
                                                                                                                     NUCLEOTIDE SEQUENCE.
STRAIN=ATCC19530;
                                                                                                                                                                                                                NCBI_TaxID=1782;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QBKY84 MYCNO
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GO; GO:0006457; P:protein folding;
GO; GO:0006986; P:response to unfo
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SIMILARITY: Belongs family.
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79.1%;
                                    o I.,
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the EMBL/GenBank/DDBJ databases
to the small heat shock protein
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                                                                                                                                                                                                                                                                                                                                                                                       (Fragment).
                              Fonteyne P.-A., Portaels e EMBL/GenBank/DDBJ databathe small heat shock prot
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Last sequence up
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Pred. No. 2.8e
8; Mismatches
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RESULT 15

OBKY71_MYCGS
OBKY71_MYCGS PRELIMINARY; PRT; 86 AA.

AC OBKY71;
AC OBKY71;
DT 01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
DT 01-OCT-2002 (TrEMBLrel. 25, Last sequence update)
DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DT 01-OCT-2003 (TREMBLREL. 25, Last annotation update)
DT 01-OCT-2003 (TREMBLREL. 25, Last annotation update)
DR Mycobacterium gastri.

GN Mycobacterium gastri.
OS Mycobacterium gastri.
OC Bacteria, Actinobacteriaee, Mycobacterium.
OC COrynebacterineae; Mycobacteriaee, Mycobacterium.
OX NGBI TaxID=1777;
RP NUCLEOTIDE SEQUENCE.
STRAIN-979-938;
RP NUCLEOTIDE SEQUENCE.
SHAMPOT-938;
RP NUCLEOTIDE SEQUENCE.
SHAMPOT-938;
RP SHAMPOT-938;
RP STRAIN-99-938;
RP SHAMPOT-938;
RP NON_TER 86
RP NON_TER 86
RP SEQUENCE 86 AA; 9722 MW; BAF085B56BF1DBF3 CRC64;
Search completed: March
Job time: 38.8298 secs
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Best Local S
Matches 64
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Best Local Similarity
Matches 64; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUCLEOTIDE SEQUENCE.

STRAIN-M97-938;

Shamputa I.C., Bastian I., Fonteyne P.-A., Portaels F.;

Submitted (APR-2000) to the EMBL/GenBank/DDBJ databases.

-!- SIMILARITY: Belongs to the small heat shock protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; AF253445; AAM69207.1; -; Genomic_DNA.
Interpro; IPR002068; Hsp20.
Pfam; PF00011; HSP20; 1.
PROSITE; PS01031; HSP20; 1.
NON_TER
1 1
NON_TER 1
NON_TER 86 86
SEQÜENCE 86 AA; 9722 MW; BAF085B56BF1DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales; Corynebacterineae; Mycobacteriaceae; Mycobacterium.
                                                                                   13
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                                                                                 NGRSEFCYGSFIRTVPLPAGVTEDGI 86
                                                                                                                DGRSEFAYGSFVRTVSLPVGADEDDI 113
                                                                                                                                                                  NGRSEFCYGSFIRTVPLPAGVTEDGI 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DGRSEFAYGSFVRTVSLPVGADEDDI 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FAGLRPAFDSRLMRLEDEMKGDRYELRAEIPGVDPEKDIEITVLDGQLTIKAERSEKKEF
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                                                                                                                                                                                                                                                        Conservative
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                   23,
                                                                                                                                                                                                                                                    46.6%; Score 343; DB 2; Length 86; 74.4%; Pred. No. 1.9e-23; tive 11; Mismatches 11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               46.6%; Score 343; DB 2; Length 86; 74.4%; Pred. No. 1.9e-23; tive 11; Mismatches 11; Indels
                   2006,
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                      05:24:22
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Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
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Perfect score:
                                                                                                                                       Database
                                                                                                                                                                                                                                                                     Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
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    Issued Patents AA:*

1: /cgn2 6/ptodata/1

2: /cgn2 6/ptodata/1

3: /cgn2 6/ptodata/1

4: /cgn2 6/ptodata/1

5: /cgn2 6/ptodata/1

6: /cgn2_6/ptodata/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         March 23, 2006, 05:24:53 ; Search time 9.82128 Seconds (without alignments) 1212.194 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                           572060 seqs, 82675679 residues
                                                                                                                                                                                                                                                                                                                                                                                                                      BLOSUM62
Gapop 10.0 , Gapext 0.5
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736
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/cgn2_6/ptodata/1/iaa/5_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6_COMB.pep:*
/cgn2_6/ptodata/1/iaa/H_COMB.pep:*
/cgn2_6/ptodata/1/iaa/H_COMB.pep:*
/cgn2_6/ptodata/1/iaa/RE_COMB.pep:*
/cgn2_6/ptodata/1/iaa/RE_COMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenCore version 5.1.7
(c) 1993 - 2006 Biocceleration Ltd
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

### SUMMARIES

| 27                | 26                   | 25                 | 24                  | 23                  | 22                 | 21                  | 20                 | 19                  | 18                | 17               | 16               | 15                  | 14                 | 13                  | 12                  | 11                  | 10               | 9                | 8                | 7                 | 6                | υī               | 4                | u                 | 2                 | _                 | Result<br>No.         |
|-------------------|----------------------|--------------------|---------------------|---------------------|--------------------|---------------------|--------------------|---------------------|-------------------|------------------|------------------|---------------------|--------------------|---------------------|---------------------|---------------------|------------------|------------------|------------------|-------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-----------------------|
| 75.5              | •                    | 79                 | 79                  | 79                  | 79                 | 79                  | 81                 | 82.5                | 83.5              | 84.5             | 93.5             | 94                  | 100.5              | 116                 | 132                 | 146.5               | 245              | 245              | 245              | 718               | 736              | 736              | 736              | 736               | 736               | 736               | Score                 |
| 10.3              | 10.7                 | 10.7               | 10.7                | 10.7                | 10.7               | 10.7                | 11.0               | 11.2                | 11.3              |                  | 12.7             | 12.8                | 13.7               | 15.8                | 17.9                | 19.9                | 33.3             | 33.3             | 33.3             | 97.6              | 100.0            | 100.0            | •                | 100.0             | 100.0             | 100.0             | Query<br>Match        |
| 199               | 475                  | 918                | 918                 | 250                 | 183                | 175                 | 460                | 274                 | 177               | 759              | 167              | 156                 | 250                | 131                 | 139                 | 151                 | 48               | 48               | 48               | 143               | 856              | 433              | 368              | 331               | 331               | 144               | Query<br>Match Length |
| -                 | Ν                    | N                  | N                   | N                   | N                  | N                   | N                  | N                   | N                 | N                | N                | N                   | N                  | N                   | N                   | N                   | N                | N                | N                | N                 | N                | N                | N                | N                 | N                 | N                 | BB                    |
| US-08-900-407-4   | US-09-252-991A-29494 | US-09-438-185A-999 | US-09-198-452A-1072 | US-09-513-999C-7968 | US-09-949-016-8416 | US-09-513-999C-7967 | US-09-199-637A-132 | US-09-107-532A-4705 | US-10-105-427-2   | US-09-792-024-76 | US-09-835-909A-2 | US-09-543-681A-7799 | US-09-949-016-8090 | US-09-902-540-11500 | US-09-107-532A-4324 | US-09-902-540-13672 | US-09-953-510-18 | US-08-447-398-18 | US-09-157-689-18 | US-09-461-774-8   | US-09-287-849-12 | US-09-287-849-14 | US-09-287-849-24 | US-09-287-849-4   | US-09-223-040-4   | US-09-462-556-2   | ID                    |
| sequence 4, Appli | 29                   |                    | 1072,               | 7968,               | 8416,              | 7967,               |                    | 47                  | Sequence 2, Appli | 76               | 2, Ap            | 7799,               | 8090,              | Sequence 11500, A   | 4324,               | 136                 | 18,              | 18,              | 18,              | Sequence 8, Appli | 12,              | 14,              | 24,              | Sequence 4, Appli | Sequence 4, Appli | Sequence 2, Appli | Description           |

RESULT 2 US-09-223-040-4 ; Sequence 4, Application US/09223040

| 75.5 10.3 459 2 US-09-13-733A-1700 75.5 10.3 459 2 US-09-13-733A-1700 75.5 10.3 459 2 US-09-957A-170 75.5 10.3 459 2 US-09-957A-170 76.5 10.1 168 2 US-09-902-540-12550 77.5 9.9 291 2 US-09-902-540-10533 77.5 9.9 8 188 2 US-09-902-540-10533 77.5 9.7 193 1 US-08-900-407-3 71.5 9.7 193 1 US-08-900-407-3 71.5 9.7 693 2 US-09-376-393-2 71.5 9.7 693 2 US-09-376-393-2 71.5 9.6 497 2 US-09-328-352-7286 70.5 9.6 1132 2 US-09-328-352-7286 68.5 9.3 167 2 US-09-328-352-4371 70.5 9.6 1132 2 US-09-328-352-4371 70.5 9.6 1132 2 US-09-328-352-4371 70.5 9.6 1132 2 US-09-28-795A-15026 68.5 9.3 486 2 US-09-252-991A-24336 68.5 9.3 594 2 US-09-252-991A-18099 68 9.2 248 2 US-09-282-991A-11667 | 45                   | 44                   | 43                   | 42                   | 41                   | 40                 | 39                 | 38              | 37                  | 36              | 35                  | 34                 | 33                  | 32                  | 31                 | 30                 | 29                 | 0                   |
|--|----------------------|----------------------|----------------------|----------------------|----------------------|--------------------|--------------------|-----------------|---------------------|-----------------|---------------------|--------------------|---------------------|---------------------|--------------------|--------------------|--------------------|---------------------|
| 459 2 US<br>1459 2 US<br>291 2 US<br>545 2 US<br>1193 1 US<br>693 2 US<br>693 2 US<br>693 2 US<br>1193 2 US<br>693 2 US<br>693 2 US<br>694 2 US<br>248 2 US  | 68                   | 68.5                 | 68.5                 | 68.5                 | 70.5                 | 70.5               | 71                 | 71.5            | 71.5                | 71.5            | 72                  | 72                 | 72.5                | 73                  | 74.5               | 75.5               | 75.5               | ٠. ن                |
| 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2  | 9.2                  | 9.3                  | 9.3                  | 9.3                  | 9.6                  | 9.6                | 9.6                | 9.7             | 9.7                 | 9.7             | 9.8                 | 9.8                | 9.9                 | 9.9                 | 10.1               | 10.3               | 10.3               |                     |
|  | 248                  | 594                  | 486                  | 167                  | 1132                 | 923                | 497                | 693             | 311                 | 193             | 332                 | 188                | 545                 | 291                 | 168                | 459                | 459                |                     |
| US-09-513-783A-170 US-10-100-957A-170 US-10-100-957A-170 US-09-949-016-8494 US-09-902-540-10553 US-09-902-540-10533 US-09-902-540-9929 US-09-605-703B-2268 US-08-900-407-3 US-09-343-25 US-09-343-25-7286 US-09-328-352-7286 US-09-328-352-731 US-09-328-352-7386 US-09-328-352-4371 US-09-328-352-4371 US-09-328-352-4371 US-09-328-352-4371 US-09-328-352-4371 US-09-328-352-4371  | N                    | N                    | N                    | N                    | N                    | N                  | N                  | N               | N                   | ب               | N                   | N                  | N                   | N                   | N                  | N                  | N                  | t                   |
|  | US-09-489-039A-11767 | US-09-252-991A-18099 | US-09-252-991A-24336 | US-09-489-039A-13896 | US-09-248-796A-15026 | US-09-328-352-4371 | US-09-328-352-7286 | US-09-376-343-2 | US-09-543-681A-5563 | US-08-900-407-3 | US-09-605-703B-2268 | US-09-902-540-9929 | US-09-902-540-10533 | US-09-902-540-12550 | US-09-949-016-8494 | US-10-100-957A-170 | US-09-513-783A-170 | CC CV V.V CEC 10000 |
|  | 11767, F             | 18099, A             | 24336, A             | 13896, A             | 15026, A             | 4371, Ar           | 7286, Ap           | 2, Appli        | 5563, Ap            | 3, Appli        | 2268, Ar            | 9929, Ap           | 10533, A            | 12550, 4            | 8494, Ap           | 170, App           | 170, App           |                     |

# ALIGNMENTS

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NUMBER OF SEQ ID NOS: 2
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 2
LENGTH: 144
TYPE: PRT
ORGANISM: Mycobacterium tuberculosis
FEATURE: INFORMATION: alpha-crystallin heat shock protein
US-09-462-556-2
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US-09-462-556-2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT APPLICATION NUMBER: US/09/462,556
CURRENT FILING DATE: 2000-06-27
PRIOR APPLICATION NUMBER: US 60/052,199
PRIOR FILING DATE: 1997-07-10
PRIOR APPLICATION NUMBER: WO PCT/US98/14227
PRIOR FILING DATE: 1998-07-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: The Government of the United States of America APPLICANT: as represented by The Secretary of the APPLICANT: Department of Health and Human Services TITLE OF INVENTION: Method of Attenuating Pathogenic Mycobacteria and TITLE OF INVENTION: Strains of Mycobacteria So Attenuated FILE REFERENCE: 015280-333100US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
  121
                      121 ILTVSVAVSEGKPTEKHIQIRSTN 144
                                                                            1 MATTLPVQRHPRSLFPEFSBLFAAFPSFAGLRPTFDTRLMRLEDEMKEGRYEVRAELPGV 60
                                                                                                                                                        MATTLPVQRHPRSLFPEFSELFAAFPSFAGLRPTFDTRLMRLEDEMKEGRYEVRAELPGV
Barry III,
Yuan, Ying
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; OTHER INFORMATION: Description of Artificial Sequence:tri-fusion US-09-287-849-4
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CURRENT APPLICATION NUMBER: US/09/287,849
CURRENT FILING DATE: 1999-04-07
PRIOR APPLICATION NUMBER: US 08/818,112
PRIOR APPLICATION NUMBER: US 08/942,578
PRIOR PILING DATE: 1997-10-01
PRIOR PILING DATE: 1997-10-01
PRIOR APPLICATION NUMBER: US 08/942,578
PRIOR APPLICATION NUMBER: US 09/025,197
PRIOR APPLICATION NUMBER: US 09/056,556
PRIOR APPLICATION NUMBER: US 09/056,556
PRIOR FILING DATE: 1998-02-18
PRIOR FILING DATE: 1998-02-04-07
PRIOR FILING DATE: 1998-04-07
PRIOR FILING DATE: 1998-04-07
PRIOR FILING DATE: 1998-04-07
PRIOR FILING DATE: 1998-04-07
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; TYPE: PRT
; TYPE: PRT
; OYANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:tri-fusion
US-09-223-040-4
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SEQ ID NO 4
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Matches 144: Common
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APPLICANT:
APPLICANT:
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APPLICANT: Campos-Neto, Antonio
APPLICANT: Corixa Corporation
TITLE OF INVENTION: Fusion Protiens of Mycobacterium tuberculosis Antigens
TITLE OF INVENTION: and Their Uses
FILE REFERENCE: 014058-009020US
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APPLICANT: Corixa Corporation
TITLE OF INVENTION: Fusion Proteins of Mycobacterium tuberculosis Antigens
TITLE OF INVENTION: and Their Uses
FILE REFERENCE: 014058-009010US
CURRENT APPLICATION NUMBER: US/09/223,040
CURRENT FILING DATE: 1998-12-30
NUMBER OF SEQ ID NOS: 10
SOFTWARE: PatentIn Ver. 2.1
                                                                                                                                                                                                                      PRIOR APPLICATION NUMBER: US 09/223,040 PRIOR FILING DATE: 1998-12-30
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                                           LENGTH: 331
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
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Dillon, Davin C.
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llarity 100.0%;
Conservative 0;
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Pred. No. 3.4e-80;
; Mismatches 0;
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PRIOR FILING DATE: 1998-04-07
PRIOR PPLICATION NUMBER: US 09,
PRIOR FILING DATE: 1998-12-30
NUMBER OF SEQ ID NOS: 46
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 24
LENGTH: 368
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CURRENT APPLICATION NUMBER: US/09/287,849
CURRENT FILING DATE: 1999-04-07
PRIOR APPLICATION NUMBER: US 08/818,112
PRIOR FILING DATE: 1997-03-13
PRIOR APPLICATION NUMBER: US 08/942,578
PRIOR APPLICATION NUMBER: US 08/942,578
PRIOR APPLICATION NUMBER: US 09/025,197
PRIOR APPLICATION NUMBER: US 09/025,197
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APPLICANT: Reed, St
APPLICANT: Skeiky,
APPLICANT: Dillon,
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Best Local
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TITLE OF INVENTION: Fusion protiens of Mycobacterium tuberculosis Antigens
TITLE OF INVENTION: and Their Uses
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                                                                                                                                                                                                                                                                                                                                                      TYPE: PRT
                                                                                                                                                                                                                                                                                               OTHER INFORMATION: Description of Artificial Sequence:tri-fusion
                                                                                                                                                                                                                                                                                                                  FEATURE:
                                                                                                                                                                                                                                                                                                                                  ORGANISM: Artificial Sequence
                                                                                                                                                                                                                             Local Similarity
129
                  121 ILTVSVAVSEGKPTEKHIQIRSTN 144
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6627198
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Dillon, Davin C.
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Corixa Corporation
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Pred. No. 3.4e-80;
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Pred. No. 4
                                                                                                                                                                                                           Mismatches
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RESULT 5 US-09-287-849-14

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CURRENT APPLICATION NUMBER: US/09/287,849
CURRENT FILING DATE: 1999-04-07
PRIOR APPLICATION NUMBER: US 08/818,112
PRIOR FILING DATE: 1997-03-13
PRIOR APPLICATION NUMBER: US 08/942,578
PRIOR FILING DATE: 1997-10-01
PRIOR APPLICATION NUMBER: US 09/025,197
PRIOR FILING DATE: 1998-02-18
PRIOR PILING DATE: 1998-04-07
PRIOR APPLICATION NUMBER: US 09/056,556
PRIOR APPLICATION NUMBER: US 09/056,556
PRIOR APPLICATION NUMBER: US 09/223,040
PRIOR APPLICATION NUMBER: US 09/223,040
PRIOR APPLICATION NUMBER: US 09/223,040
PRIOR PILING DATE: 1998-04-07
PRIOR PILING DATE: 1998-04-07
PRIOR PILING DATE: 1998-04-07
PRIOR PILING DATE: 1998-04-07
                                                                                                                                                                                                                                                  APPLICANT: Reed, Steven G.
APPLICANT: Skeiky, Yasir A.
APPLICANT: Dillon, Davin C.
APPLICANT: Alderson, Mark
APPLICANT: Campos Neto, Ant
APPLICANT: Corixa Corporati
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Best Local Similarity
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SEQ ID NO 14
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APPLICANT:
                CURRENT APPLICATION NUMBER: US/09/287,849
CURRENT FILING DATE: 1999-04-07
PRIOR APPLICATION NUMBER: US 08/818,112
PRIOR FILING DATE: 1997-03-13
PRIOR APPLICATION NUMBER: US 08/942,578
PRIOR FILING DATE: 1997-10-01
PRIOR FILING DATE: 1997-10-01
PRIOR APPLICATION NUMBER: US 09/025,197
                                                                                                                                                                            APPLICANT: Campos-Neto, Antonio
APPLICANT: Corixa Corporation
TITLE OF INVENTION: Fusion Protiens of Mycobacterium tuberculosis Antigens
TITLE OF INVENTION: and Their Uses
FILE REFERENCE: 014058-009020US
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NUMBER OF SEQ ID NOS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: PRT
TYPE: PRT
ORGANIEM: Artificial Sequence
FEATURE:
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121 ILTVSVAVSEGKPTEKHIQIRSTN 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              144;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 DPDKDVDIMVRDGQLTIKAERTEQKDFDGRSEFAYGSFVRTVSLPVGADEDDIKATYDKG 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MATTLPVQRHPRSLFPEFSELFAAFPSFAGLRPTFDTRLMRLEDEMKEGRYEVRAELPGV 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Corixa Corporation
                                                                                                                                                                                                                                                                                                                      Skeiky, Yasir A.W.
Dillon, Davin C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Skeiky, Yasir
Dillon, Davin
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1998-02-18
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Pred. No. 5.2e-80;
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                                                                                                                                                                                                                                                                                              ; LENGTH: 143
; TYPE: PRT
; ORGANISM: Mycobacterium tuberculosis
US-09-461-774-8
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                                                                                                                                                                                                                                                                                                                                                               APPLICANT: CHAN, Lily
APPLICANT: CHUNG, Maxey Ching Ming
APPLICANT: LIM, Renee Lay Hong
TITLE OF INVENTION: Bacterial-derived molecules and therapeutic
TITLE OF INVENTION: diagnostic uses therefor
FILE REFERENCE: 1781-0180P
CURRENT APPLICATION NUMBER: US/09/461,774
CURRENT APPLICATION NUMBER: US/09/461,774
NUMBER OF SEQ ID NOS: 22
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 8, Applicat Patent No. 6887481 GENERAL INFORMATION:
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SOFTWARE: PatentIn Ver. 2
SEQ ID NO 12
                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                    Query Match
Best Local Similarity
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PRIOR FILING DATE: 1998-04-07
PRIOR APPLICATION NUMBER: US 09/223,040
PRIOR FILING DATE: 1998-12-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 856
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OTHER INFORMATION: Description of Artificial Sequence:penta-fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                   122 LTVSVAVSEGKPTEKHIQIRSTN 144
                                                                                                                                                                                                                        141;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 DPDKDVDIMVRDGQLTIKAERTEQKDFDGRSEFAYGSFVRTVSLPVGADEDDIKATYDKG 120
                                                                                                                                                                                    N
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                                                                                                 PDKDVDIMVRDGQLTIKAERTEQKDFDGRSEFAYGSFVRTVSLFVGADEDDIKATYDKGI 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DPDKDVDIMVRDGQLTIKAERTEQKDFDGRSEFAYGSFVRTVSLPVGADEDDIKATYDKG 128
                                                                                                                                                                   ATTLPVQRHPRSLFPEFSELFAAFPSFAGLRPTFDTRLMRLEDEMKEGRYEVRAELPGVD
                                                                       PDKDVHIMVRDGQLTIKAERTEQKDLDGRSEFAYGSFVRTVSLPVGADEDDIKATYDKGI
                                                                                                                                                ATTLPVQRHPRSLFPEFSELFAAFPSFAGLRPTFDTRLMRLEDEMKEGRYEVRAELPGVD
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LTVSVAVSEGKPTEKHIQIRSTN 143
                                                                                                                                                                                                                        Conservative
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                                                                                                                                                                                                                                      97.6%;
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Pred. No. 1.4e-78;
0; Mismatches 2;
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Pred. No. 1.4e-79;
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                                                                                                                                                                                                                                                       Length 143;
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RESULT 8 US-09-157-689-18

Sequence 18, Application US/09157689 Patent No. 6599510

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US-08-47-398-18
; Sequence 18, Application US/08447398
; Patent No. 6761894
; GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                   STRAIN:
US-09-157-689-18
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                                                                                                                                                                                                                                               Query Match
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
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APPLICATION NUMBER: US 08/551,149
FILING DATE: 31-OCT-1995
PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 08/447,398
FILING DATE: 23-MAY-1995
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: linear MOLECULE TYPE: pro
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                                                                                                                                                                                                                                                                                                                                    ANTI-SENSE: NO FRAGMENT TYPE: ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: MacLean, Kurt A.
REGISTRATION NUMBER: 31,118
REFERENCE/DOCKET NUMBER: 118-119
TELECOMMUNICATION INFORMATION:
TELEPHONE: (310) 788-5000
TELEFAX: (310) 277-1297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/157,689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 2020
STREET: LOS Angeles
CITY: LOS Angeles
STATE: California
"1 S.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 23-NOV-1993
ATTORNEY/AGENT INFORMATION:
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APPLICATION NUMBER: US 08/156,358
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                                                                                                                                                                                                                                                                                     ORGANISM: My.
                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: FILING DATE: 12-AUG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: amino acid
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                                                                                                                                                                     35 FDTRLMRLEDEMKEGRYEVRAELPGVDPDKDVDIMVRDGQLTIKAERT 82
                                                                                                                                                                                                          48; Conservative
                                                                                                                                 FDTRLMRLEDEMKEGRYEVRAELPGVDPDKDVDIMVRDGQLTIKAERT 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        48 amino acids
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2029 Century Park East, Suite 3800
                                                                                                                                                                                                                                                                                                                    Mycobacterium tuberculosis
                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
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                                                                                                                                                                                                      33.3%; Score 245; DB 2; 1
100.0%; Pred. No. 2.9e-22;
tive 0; Mismatches 0;
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RESULT 10
US-09-953-510-18
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Sequence 18, Application. ...,
Patent No. 6818223
; GENERAL INFORMATION:
; APPLICANT: Horwitz, Marcus A.
; APPLICANT: Horwitz, Marcus A.
; TITLE OF INVENTION: Abundant Extracellular
; TITLE OF INVENTION: Abundant Extracellular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-447-398-18
                                                                                                                                                                                                                                                                                                                                                                                                       Matches
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Best Local Similarity
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APPLICATION NUMBER: US 08/289,667
APPLICATION NUMBER: US 08/289,667
FILING DATE: 12-AUG-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/156,358
FILING DATE: 23-NOV-1993
ATTORNEY/AGENT INFORMATION:
NAME: MACLEAN, Kurt A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: (310) 277-12 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FRAGMENT TYPE: |
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE: protein HYPOTHETICAL: NO ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PATENT PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: 11
TELECOMMUNICATION INFORMATION:
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TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/0
FILING DATE: 23-MAY-1995
CLASSIFICATION: 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Mycol
STRAIN: Erdman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: Los Angeles
STATE: California
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REGISTRATION NUMBER: 31,118
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                                                                                   CORRESPONDENCE ADDRESS:
ADDRESSEE: Kurt A. MacLean
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                                CITY: Los Angeles
STATE: California
COUNTRY: U.S.A.
ZIP: 90067
                                                                    STREET: 2029 Century Park East,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              48 amino acids
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mycobacterium tuberculosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (310) 788-5000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                     33.3%; Score 245; DB 2;
100.0%; Pred. No. 2.9e-22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Marcus A.
Abundant Extracellular Products and
Methods for Their Production and Usa
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                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 48;
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PatentIn Release #1.0,

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APPLICANT: Hinkle, Gregory J.

APPLICANT: Slater, Steven C.

APPLICANT: Wiegand, Roger C.

TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and Uses Thereof FILE REFERENCE: 38-10(15849)B

CURRENT APPLICATION NUMBER: US/09/902,540

CURRENT FILING DATE: 2001-07-10

PRIOR APPLICATION NUMBER: 60/217,883

PRIOR FILING DATE: 2000-07-10

SEQ ID NO 13672

LENGTH: 151

TYPE: pro
                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 11
US-09-902-540-13672
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                                                              US-09-902-540-13672
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Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                              ORGANISM: Myxococcus xanthus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION FOR SEQ ID NO: 18:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HYPOTHETICAL: NO
ANTI-SENSE: NO
FRAGMENT TYPE: N-terminal
ORIGINAL SOURCE:
ORGANISM: Mycobacterium tuberculosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US 08/447,398
FILING DATE: 23-MAY-1995
APPLICATION NUMBER: US 08/289,667
FILING DATE: 12-AUG-1994
APPLICATION NUMBER: US 08/156,358
FILING DATE: 23-NOV-1993
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: MacLean, Kurt A.
REGISTRATION NUMBER: 31,118
REFERENCE/DOCKET NUMBER: 111
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: amino acid
STRANDEDNESS: <Unknown>
TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE DESCRIPTION: SEQ ID NO: 18:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tch 33.3%; So all Similarity 100.0%; 1 48; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               35 FDTRLMRLEDEMKEGRYEVRAELPGVDPDKDVDIMVRDGQLTIKAERT 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FDTRLMRLEDEMKEGRYEVRAELPGVDPDKDVDIMVRDGQLTIKAERT 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US/09/953,510 FILING DATE: 14-Sep-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN: Erdman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEPHONE: (310) 788-5000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ENGTH: 48 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (310)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Version #1.30
     19.9%;
33.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           277-1297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 245; DB 2; 1; Pred. No. 2.9e-22; 0; Mismatches 0;
     Score 146.5; DB 2
Pred. No. 1.2e-09;
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                     DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 48;
                       Length 151;
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  路
                                                                                                                                                                                                                                     NAME/KEY: misc_feature
LOCATION: (B) LOCATION 1...139
SEQUENCE DESCRIPTION: SEQ ID NO: 4324:
US-09-107-532A-4324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Patent No. 6583275

Patent No. 6583275

Patent No. 6583275

GENERAL INFORMATION:

APPLICANT: Lynn A Doucette-Stamm and David Bush

APPLICANT: Lynn A DOUCETTO ACID AND AMINO ACID SEQUENCES RELATING TO

ENTEROCOCCUS FAECIUM FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO: 4324:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: Ariniello, Pamela Deneke REGISTRATION NUMBER: 40,489
REFERENCE/DOCKET NUMBER: GTC-012
TELECOMMUNICATION IMFORMATION:
TELEPHONE: (781)893-5007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 30-Jun-1998
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 60/085,598
FILING DATE: 14 May 1998
APPLICATION NUMBER: 60/051571
FILING DATE: July 2, 1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: ASCII
CURRENT APPLICATION NUMBER: US/09/107,532A
APPLICATION NUMBER: US/09/107,532A
                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: pro
HYPOTHETICAL: YES
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
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COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                   FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
62
                            69 MVRDGQLTIKA---ERTEQKDFDG---RSEFAYGSFVRTVSLFVGADEDDIKATYDKGIL 122
                                                                                                               12 RSLFPEFSELFA-AFPSFAGLR--PTFDTRLMRLEDEMKEGRYEVRAELPGVDPDKDVDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            88 DGRSEFA----YGSFVRTVSLFVGADEDDIKATYDKGILTVSV-AVSEGKFTEKHIQI 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 35 GFVPDF-----EVKETQDAFIFKADVPGVE-EKDLEITLAENRLTISGKREEERRD 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30 GLRPTFDTRLMRLEDEMKEGR--YEVRAELPGVDPDKDVDIMVRDGQLTIKAERTEQKDF 87
                                                                                                                                                          46;
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6583275
  EYSDNTLTISANHESHTEDKE-DGNYVRKERHSVSYKRSFYLP-NVDEEKITGTFKNGVL
                                                                            RDMFPDFNDVFSPAFNDFLGVSSYPKVD-----LVENEKE--YKLTADMPGCDKE-DTTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EGDRYYAYERNYGSFSRTFTLPRGVNADNVQADFKSGVLNVRIPKKSEEQP--KRIKV 140
                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 139 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                        ORGANISM: Enterococcus faecium
                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OPERATING SYSTEM: <Unknown>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE: CD/ROM ISO9660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE: GENOME THERAPEUTICS CORPORATION
                                                                                                                                                        Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (781)893-8277
                                                                                                                                                                                                                                                                                                                                                                                                  protein
                                                                                                                                                                         17.9%;
33.1%;
                                                                                                                                                        26;
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                                                                                                                                                                           Score 132; DB 2;
Pred. No. 6.1e-08;
                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
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                                                                                                                                                          47;
                                                                                                                                                                                              Length 139;
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                                                                              61
                                                                                                                     68
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TVSVAVSEGKPTE-KHIQI 140

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PRIOR APPLICATION NUMBER: 60/241,755
PRIOR FILING DATE: 2000-10-20
PRIOR APPLICATION NUMBER: 60/237,768
PRIOR FILING DATE: 2000-10-03
PRIOR APPLICATION NUMBER: 60/231,498
PRIOR FILING DATE: 2000-09-08
NUMBER OF SEQ ID NOS: 207012
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 8090
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US-09-949-016-8090
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US-09-902-540-11500
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APPLICANT: Hinkle, Gregory J.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and Uses Thereof
FILE REFERENCE: 38-10(15849)B
CURRENT APPLICATION NUMBER: US/09/902,540
CURRENT FILING DATE: 2001-07-10
PRIOR APPLICATION NUMBER: 60/217,883
PRIOR FILING DATE: 2000-07-10
NUMBER OF SEQ ID NOS: 16825
SEQ ID NO 11500
LENGTH: 131
TWOTE: TOTAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 8090, Application US/09949016
Patent No. 6812339
GENERAL INFORMATION:
APPLICANT: VENTER, J. Craig et al.
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES.
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS
FILE REFERENCE: CL001307
                                                                                          Matches
                                                                                                          Best Local Similarity
                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: Myxococcus xanthus -09-902-540-11500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION NUMBER: US/09/949,016
CURRENT FILING DATE: 2000-04-14
                                                                                                                                                                                                   LENGTH: 250
TYPE: PRT
ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'Match 15.8%; Score 116; DB 2; Length 131; Local Similarity 27.3%; Pred. No. 4.8e-06; Nes 27; Conservative 28; Mismatches 38; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
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                                         59 GVDPDKDVDIMVRDGQLTIKAERTEQKDFDGRSEFAYGSFVRTVSLPVGADEDDIKATYD 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           33 ESGLTLHLDMPGLEA-KAIQVTVEKDILTVQSERKAEPRAEGVNVRRQERAFGTFARSFA 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    48 EGRYEVRAELPGVDPDKDVDIMVRDGQLTIKAERTEQKDFDG----RSEFAYGSFVRTVS 103
                                                                                          21; Conservative
    GFEPDQ-VKVRVKDGKVCVSAERENRYDCLGSKKYSYMNICKEFSLPPCVDEKDVTYSYG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LPDTVDASRVEARYEQGVLTLTLPRREESKPRVIEVKVQ 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LPVGADEDDIKATYDKGILTVSV-AVSEGKPTEKHIQIR 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KLVLPKTAYQPKETKKIEL 138
                                                                                                             13.7%;
                                                                                          15; Mismatches
                                                                                     Score 100.5; DB 2;
Pred. No. 0.00093;
L5; Mismatches 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ASSOCIATED
OF DETECTION AND USES THEREOF
                                                                                                                                  Length 250;
                                                                                          Indels
                                                                                        1:
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                                                                                        Gaps
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Search completed: March 23, Job time: 10.9213 secs
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                                                                                                                                                                                                                                                                                                                                                                          ; ORGANISM: Proteus mirabilis
US-09-543-681A-7799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 15
US-09-543-681A-7799
                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
APPLICANT: GARY BRETON
APPLICANT: GARY BRETON
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PROTEUS MIRABILI
TITLE OF INVENTION: DIAGNOSTICS AND THERAPEUTICS
TITLE REFERENCE: 2709.1002-001
CURRENT APPLICATION NUMBER: US/09/543,681A
CURRENT FILING DATE: 2000-04-05
PRIOR APPLICATION NUMBER: US 60/128,706
PRIOR APPLICATION NUMBER: US 60/128,706
PRIOR FILING DATE: 1999-04-09
NUMBER OF SEQ ID NOS: 8344
SEQ ID NO 7799
LENGTH: 156
TYPE: DET
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Total number of hits satisfying chosen parameters:
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Perfect score:
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1: /cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*

2: /cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*

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5: /cgn2_6/ptodata/1/pubpaa/US10A_PUBCOMB.pep:*

6: /cgn2_6/ptodata/1/pubpaa/US11_PUBCOMB.pep:*
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US-10-359-460-14
US-10-359-460-14
US-10-359-460-12
US-10-359-460-12
US-10-359-948-13
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Result No.

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| 175<br>115<br>116<br>116<br>116<br>116<br>116<br>116<br>116<br>116<br>11   | 142.5               | 144                 | 144.5               | 144.5               | 145.5               | 145.5               | 146.5               | 148                 | 148                 | 149.5               | 150.5               | 150.5           | 150.5               | 150.5               | 151                 | 152.5               | 154.5  |   |
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|  | 145                 | 125                 | 166                 | 150                 | 169                 | 151                 | 215                 | 146                 | 140                 | 140                 | 188                 | 188             | 169                 | 145                 | 168                 | 132                 | 175    |   |
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|  | 21854,              | 21760,              | 21771,              | 21853,              | 21709,              | •                   | •                   | •                   | 21703,              | 21759,              |                     | 8, Appl         | 21816,              | 21749,              | 21710,              | 21763,              | 21769, | • |
| 63,<br>10,<br>10,<br>16,<br>16,<br>17,<br>11,<br>11,<br>11,<br>11,<br>11,<br>11,<br>11,<br>11,<br>11   | Þ                   | ×                   | Þ                   | Þ                   | ×                   | Þ                   | ×                   | ×                   | ×                   | ×                   | ×                   | ۳.              | ×                   | ×                   | ×                   | ×                   | ×      |   |

### ALIGNMENTS

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Sequence:

Database

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Sequence 24, Application US/10617038
Publication No. US20040057963A1
GENERAL INFORMATION:
APPLICANT: Andersen, Peter
APPLICANT: Rosenkrands, Ida
APPLICANT: Stryhn, Anette
TITLE OF INVENTION: Therapeutic TB Vaccine
FILE REFERENCE: SSISAUSA
CURRENT FILING DATE: 2003-07-11
PRIOR APPLICATION NUMBER: US/10/617,038
CURRENT FILING DATE: 2003-07-13
PRIOR APPLICATION NUMBER: US 60/401,725
PRIOR FILING DATE: 2002-08-07
NUMBER OF SEQ ID NOS: 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; TYPE: PRT ; ORGANISM: Mycobacterium tuberculosis US-10-617-038-24
                                                                               Sequence 23, Application US/10332512A Publication No. US20040180056A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: PatentIn version 3.2
SEQ ID NO 24
LENGTH: 144
APPLICANT: ORME, Ian M.
APPLICANT: BELISLE, John T.
TITLE OF INVENTION: MID-LIFE
FILE REFERENCE: 38861-186292
                                                                                                                                                                                                                                    121 ILTVSVAVSEGKPTEKHIQIRSTN 144
                                                                                                                                                                                                                                                                                                                     61 DPDKDVDIMVRDGQLTIKAERTEQKDFDGRSEFAYGSFVRTVSLPVGADEDDIKATYDKG
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                                                                                                                                                                                                                                                                                                                                                                                                    100.0%; Score 736; DB 4; ilarity 100.0%; Pred. No. 1.1e-72; Conservative 0; Mismatches 0;
                          VACCINE AND METHODS FOR BOOSTING ANTI-MYCOBACTERIAL IMMUT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 144;
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US-09-287-849-4
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                                           Query Match
Best Local Similarity 100.
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                                                                                                                                                                                                                                                             SEQ ID NO 4
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: Fusion Frotiens of Mycobacterium tuberculosis Antigens
TITLE OF INVENTION: and Their Uses
FILE REFERENCE: 01405s-09020US
CURRENT APPLICATION NUMBER: US/09/287,849
CURRENT FILING DATE: 1999-04-07
PRIOR APPLICATION NUMBER: US 08/818,112
PRIOR FILING DATE: 1997-03-13
PRIOR APPLICATION NUMBER: US 08/942,578
PRIOR APPLICATION NUMBER: US 08/942,578
PRIOR PILING DATE: 1997-10-01
PRIOR PILING DATE: 1998-02-18
PRIOR FILING DATE: 1998-02-18
PRIOR FILING DATE: 1998-02-18
PRIOR FILING DATE: 1998-02-18
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APPLICANT: Campos-Neto, Antonio
APPLICANT: Corixa Corporation
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CURRENT FILING DATE: 2003-01-10
PRIOR APPLICATION NUMBER: PCT/US01/21717
PRIOR FILING DATE: 2001-07-10
PRIOR APPLICATION NUMBER: US 60/217,646
PRIOR FILING DATE: 2000-07-10
NUMBER OF SEQ ID NOS: 31
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                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION NUMBER:
PRIOR FILING DATE: 1998-1
                                                                                                                                                                                               LENGTH: 331
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                               FEATURE:
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Dillon, Davin C.
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                                                                                                                                                                                                                                                                                                                       1998-12-30
                                                         100.0%; Score 736; DB 3;
100.0%; Pred. No. 3.5e-72;
tive 0; Mismatches 0;
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                                                                                                   Length 331;
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RESULT 5
US-10-39-459-4
; Sequence 4, Application US/10359459
; Publication No. US20040013677A1
; GENERAL INFORMATION:
; APPLICANT: Skeiky, Yasir
; APPLICANT: Alderson, Mark
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US-10-359-460-4
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CURRENT APPLICATION NUMBER: US/10/359,460
CURRENT FILING DATE: 2003-02-05
PRIOR APPLICATION NUMBER: US/09/287,849
PRIOR FILING DATE: 1999-04-07
PRIOR APPLICATION NUMBER: US 08/818,112
PRIOR FILING DATE: 1997-03-13
PRIOR APPLICATION NUMBER: US 08/942,578
PRIOR APPLICATION NUMBER: US 08/942,578
PRIOR APPLICATION NUMBER: US 09/025,197
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APPLICANT: Reed, Stey,
APPLICANT: Skeiky,
APPLICANT: Dillon, I
APPLICANT: Alderson,
APPLICANT: Campos-No
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PRIOR FILING DATE: 1998-12-30
NUMBER OF SEQ ID NOS: 46
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 4
LENGTH: 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
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TITLE OF INVENTION: Fusion Protiens of Mycobacterium tuberculosis Antigens
TITLE OF INVENTION: and Their Uses
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 09/056,556
PRIOR FILING DATE: 1998-04-07
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ORGANISM: Artificial Sequence
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Dillon, Davin C.
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100.0%; Pred. No. 3.5e-72;
tive 0; Mismatches 0;
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RESULT 6
US-09-287-849-24
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                                    ; OTHER INFORMATION: Description of Artificial Sequence:tri-fusion US-09-287-849-24
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CURRENT FILING DATE: 1999-04-07
PRIOR APPLICATION NUMBER: US 08/818,112
PRIOR FILING DATE: 1997-03-13
PRIOR PILING DATE: 1997-10-01
PRIOR PILING DATE: 1997-10-01
PRIOR PILING DATE: 1998-02-18
PRIOR FILING DATE: 1998-02-18
PRIOR FILING DATE: 1998-02-18
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Best Local Similarity
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OTHER INFORMATION: Description of Artificial Sequence:tri-fusion
-10-359-459-4
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LENGTH: 331
TYPE: PRT
ORGANISM: Artificial Sequence
Query Match
                                                                                                                                                        SEQ ID NO 24
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APPLICANT:
APPLICANT:
APPLICANT:
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PRIOR FILING DATE: 1998-12-30
NUMBER OF SEQ ID NOS: 10
SOFTWARE: PatentIn Ver. 2.1
                                                                                                                                                                      PRIOR FILING DATE: 19
NUMBER OF SEQ ID NOS:
SOFTWARE: Patentin Ve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Corixa Corporation TITLE OF INVENTION: Fusion Protiens of Mycobacterium tuberculosis Antigens TITLE OF INVENTION: and Their Uses
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CURRENT APPLICATION NUMBER: US/10/359,459
CURRENT FILING DATE: 2003-02-05
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                                                                                TYPE: PRT ORGANISM: Artificial Sequence
                                                                          FEATURE:
                                                                                                                                  ENGTH: 368
                                                                                                                                                                                                                                                  FILING DATE: 1998-0
APPLICATION NUMBER:
FILING DATE: 1998-0
                                                                                                                                                                                                                                APPLICATION NUMBER:
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. US20020009459A1
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Corixa Corporation
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Dillon, Davin C.
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                                                                                                                                                                                                                                          UMBER: US 09/056,556
1998-04-07
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100.0%;
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Pred. No. 3.5e-72;
; Mismatches 0;
Score 736;
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Length 368;
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US-10-359-460-24
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APPLICANT: Skei)
APPLICANT: Dillo
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Best Local Similarity
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APPLICANT: Corixa Corporation
TITLE OF INVENTION: Fusion Protiens of Mycobacterium tuberculosis Antigens
TITLE OF INVENTION: and Their Uses
FILE REFERENCE: 014058-009020US
CURRENT APPLICATION NUMBER: US/10/359,460
CURRENT FILING DATE: 2003-02-05
PRIOR APPLICATION NUMBER: US/99/287,849
PRIOR FILING DATE: 1999-04-07
PRIOR FILING DATE: 1999-03-13
PRIOR APPLICATION NUMBER: US 08/818,112
PRIOR PILING DATE: 1997-03-13
PRIOR FILING DATE: 1997-03-13
PRIOR FILING DATE: 1997-10-01
PRIOR FILING DATE: 1997-10-01
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PRIOR ETLING DATE: 1998-04-07
PRIOR APPLICATION NUMBER: US 09/223,040
PRIOR ETLING DATE: 1998-12-30
NUMBER OF SEQ ID NOS: 46
SOFTWARE: Patentin Ver. 2.1
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                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 368
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                        FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US 09/056,556 FILING DATE: 1998-04-07
                      121 ILTVSVAVSEGKPTEKHIQIRSTN 144
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129
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ILTVSVAVSEGKPTEKHIQIRSTN 152
                                                                             DPDKDVDIMVRDGQLTIKAERTEQKDFDGRSEFAYGSFVRTVSLPVGADEDDIKATYDKG
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Dillon, Davin C.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Steven G.
                                                                                                                                                                                                                                                        100.0%; Score 736; 100.0%; Pred. No. 4
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                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                        4e-72;
                                                                                                                                                                                                                                                                          DB 4;
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RESULT 8 US-09-287-849-14

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APPLICANT: Campos-Neto, Autumn.

APPLICANT: Corixa Corporation

TITLE OF INVENTION: Pusion Protiens of Mycobacterium tub

TITLE OF INVENTION: Brusion Protiens of Mycobacterium tub

TITLE OF INVENTION: and Their Uses

FILE REFERENCE: 014058-009020US

CURRENT APPLICATION NUMBER: US/09/287,849

CURRENT FILING DATE: 1999-04-07

PRIOR APPLICATION NUMBER: US 08/818,112

PRIOR FILING DATE: 1997-03-13

PRIOR FILING DATE: 1997-03-13

PRIOR FILING DATE: 1997-10-01

PRIOR FILING DATE: 1997-10-01

PRIOR APPLICATION NUMBER: US 09/025,197

PRIOR APPLICATION NUMBER: US 09/025,556
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SEQ ID NO 14
LENGTH: 433
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                             Sequence 14, Application US/10359460 Publication No. US20030147911A1 GENERAL INFORMATION:
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APPLICANT: Campos-Neto, Antonio
APPLICANT: Corixa Corporation
TITLE OF INVENTION: Fusion Protiens of Mycobacterium tuberculosis Antigens
TITLE OF INVENTION: and Their Uses
FILE REFERENCE: 014058-009020US
CURRENT APPLICATION UMMBER: US/10/359,460
CURRENT FILING DATE: 2003-02-05
PRIOR APPLICATION NUMBER: US/09/287,849
PRIOR PILING DATE: 1999-04-07
PRIOR PPLICATION NUMBER: US/09/818,112
PRIOR PILING DATE: 1997-03-13
PRIOR APPLICATION NUMBER: US/08/942,578
                                                                                                                                                                                                                                                                                                       APPLICANT: Reed, Steven G.
APPLICANT: Skeiky, Yasir A.W.
APPLICANT: Dillon, Davin C.
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PRIOR APPLICATION NUMBER: US 09/056,556
PRIOR FILING DATE: 1998-04-07
PRIOR APPLICATION NUMBER: US 09/223,040
PRIOR PILING DATE: 1998-12-30
NUMBER OF SEQ ID NOS: 46
                                                                                                                                                                                                                                                                                      APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OTHER INFORMATION: Description of Artificial Sequence:tetra-fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121 ILTVSVAVSEGKPTEKHIQIRSTN 144
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ILTVSVAVSEGKPTEKHIQIRSTN 152
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                                                                                                                                                                                                                                                                                        Alderson,
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Dillon, Davin C.
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Pred. No. 5e-72;
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PRIOR APPLICATION NUMBER: US 09/025,197
PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 09/056,556
PRIOR FILING DATE: 1998-04-07
PRIOR APPLICATION NUMBER: US 09/223,040
PRIOR FILING DATE: 1998-12-30
NUMBER OF SEQ ID NOS: 46
SOFTWARE: PATENTIN Ver. 2.1
SEQ ID NO 14
                                                                                        ; FEATURE: ; OTHER INFORMATION: Description of Artificial Sequence:penta-fusion US-09-287-849-12
                                                                                                                                                  NUMBER OF SEQ ID NOS: 46
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 12
LENGTH: 856
TYPE: PRT
ORGANISM: Artificial Sequence
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CURRENT APPLICATION NUMBER: US/09/287,849
CURRENT FILING DATE: 1999-04-07
PRIOR APPLICATION NUMBER: US 08/818,112
PRIOR FILING DATE: 1997-03-13
PRIOR FILING DATE: 1997-10-01
PRIOR APPLICATION NUMBER: US 08/942,578
PRIOR FILING DATE: 1997-10-01
PRIOR APPLICATION NUMBER: US 09/025,197
PRIOR PILING DATE: 1998-04-07
PRIOR APPLICATION NUMBER: US 09/056,556
PRIOR PILING DATE: 1998-04-07
PRIOR PILING DATE: 1998-04-07
PRIOR APPLICATION NUMBER: US 09/223,040
PRIOR APPLICATION NUMBER: US 09/223,040
PRIOR APPLICATION NUMBER: US 09/223,040
PRIOR APPLICATION NUMBER: US 09/223,040
PRIOR APPLICATION NUMBER: US 09/223,040
PRIOR FILING DATE: 1998-04-07
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        Matches 144;
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Corixa Corporation
TITLE OF INVENTION: Fusion Protiens
TITLE OF INVENTION: and Their Uses
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
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ORGANISM: Artificial Sequence
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                            Local Similarity
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Dillon, Davin C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Campos-Neto, Antonio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Alderson, Mark
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conservative (
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                          100.0%; Score 736; DB 3; 100.0%; Pred. No. 1.3e-73
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Pred. No. 5e-72;
        Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of Mycobacterium tuberculosis Antigens
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                                              Length 856;
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        Gaps
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APPLICANT: Alderson, Mark
APPLICANT: Compose Neto, Antonio
APPLICANT: Compose Neto, Antonio
APPLICANT: Corixa Corporation
ITILE OF INVENTION: Fusion Protiens of Mycobacterium tuberculosis Antigens
ITILE OF INVENTION: Fusion Protiens of Mycobacterium tuberculosis Antigens
ITILE OF INVENTION: and Their Uses
ITILE OF INVENTION: MARCE USO9020US
CURRENT APPLICATION NUMBER: US/10/359,460
CURRENT FILING DATE: 2003-02-05
PRIOR APPLICATION NUMBER: US/09/287,849
PRIOR APPLICATION NUMBER: US 08/942,578
PRIOR APPLICATION NUMBER: US 08/818,112
PRIOR APPLICATION NUMBER: US 08/942,578
PRIOR APPLICATION NUMBER: US 08/942,578
PRIOR APPLICATION NUMBER: US 08/942,578
PRIOR APPLICATION NUMBER: US 08/942,578
PRIOR APPLICATION NUMBER: US 08/925,197
PRIOR APPLICATION NUMBER: US 09/025,197
PRIOR APPLICATION NUMBER: US 09/025,197
PRIOR APPLICATION NUMBER: US 09/025,3040
PRIOR APPLICATION NUMBER: US 09/023,040
PRIOR APPLICATION NUMBER: US 09/223,040
RESULT 12
US-10-369-983-13
; Sequence 13, Application US/10369983
; Publication No. US20030235593A1
; GENERAL INFORMATION:
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US-10-359-460-12
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LENGTH: 856
TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
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SOFTWARE: PatentIn Ver. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION NUMBER: US 09/223,040 PRIOR FILING DATE: 1998-12-30
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                   121 ILTVSVAVSEGKPTEKHIQIRSTN 144
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                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                    DPDKDVDIMVRDGQLTIKAERTEQKDFDGRSEFAYGSFVRTVSLPVGADEDDIKATYDKG 120
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                                                                                                                                                                                                                                                                                                            MATTLPVQRHPRSLFPEFSELFAAFPSFAGLRPTFDTRLMRLEDEMKEGRYEVRAELPGV
                                                                                                                                                                                                                                                                                                                                                MATTLPVQRHPRSLFPEFSELFAAFPSFAGLRPTFDTRLMRLEDEMKEGRYEVRAELPGV 60
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                                                                                                                                              ILTVSVAVSEGKPTEKHIQIRSTN 152
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Dillon, Davin C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/10359460 vo. US20030147911A1
                                                                                                                                                                                                                                                                                                                                                                                        100.0%; llarity 100.0%; Conservative 0;
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                                                                                                                                                                                                                                                                                                                                                                                        Score 736; DB 4;
Pred. No. 1.3e-71;
; Mismatches 0;
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APPLICANT: Guderian, Jeff
APPLICANT: Reed, Steven
APPLICANT: Corixa Corporation
FIIIE OF INVENTION: Fusion Proteins of Mycobacterium Tuberculosis
FILE REFERENCE: 014058-009081US
CURRENT APPLICATION NUMBER: US/10/369,983
CURRENT FILING DATE: 2003-02-18
PRIOR APPLICATION NUMBER: US 60/357,351
PRIOR FILING DATE: 2002-02-15
NUMBER OF SEQ ID NOS: 22
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 13
LENGTH: 875
TYPE: PDT
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US-09-953-510-18
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 18, Application Upatent No. US20020131975A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: PRT
ORGANISM: Artificial Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/447,398
FILING DATE: 23-WAY-1995
APPLICATION NUMBER: US 08/289,667
FILING DATE: 12-AUG-1994
APPLICATION UMBER: US 08/156,358
FILING DATE: 23-NOV-1993
                                                                                                                                                                                                                                    CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
ADDRESSEE: Kurt A. MacLean
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                  ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Horwitz, Marcus A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 MATTLPVQRHPRSLFPEFSELFAAFPSFAGLRPTFDTRLMRLEDEMKEGRYEVRAELPGV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/09/953,510 FILING DATE: 14-Sep-2001 CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ILTVSVAVSEGKPTEKHIQIRSTN 875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ILTVSVAVSEGKPTEKHIQIRSTN 144
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                                                                                                                                                                                                                                                                       COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                              CITY: Los Angeles
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET: 2029 Century Park East,
NAME: MacLean,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Application US/09953510
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                                                                                                                                                                                                                                                        Version #1.30
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Publication No. US20040018209A1
GENERAL INFORMATION:
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INFORMATION FOR SEQ ID NO: 18:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INFORMATION FOR SEQ ID NO: 18:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                              APPLICATION NUMBER: US/09/953,413
FILING DATE: 14-Sep-2001
CLASSIFICATION: «Unknown»
PRIOR APPLICATION NUMBER: US 08/447,398
FILING DATE: 23-MAY-1995
APPLICATION NUMBER: US 08/289,667
FILING DATE: 12-MG-1994
APPLICATION NUMBER: US 08/156,358
FILING DATE: 23-NOV-1993
                                   ATTORNEY/AGENT INFORMATION:
NAME: MacLean, Kurt A.
REGISTRATION NUMBER: 31,118
REFERENCE/DOCKET NUMBER: 112-272
TELECOMMUNICATION INFORMATION:
TELEPHONE: (310) 788-5000
TELEPAX: (310) 277-1297
                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
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REFERENCE/DOCKET NUMBER: 11:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 48 amino acids
TYPE: amino acid
STRANDEDNESS: <Unknown>
TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
ADDRESSEE: Kurt A. MacLean
STREET: 2029 Century Park East, Suite 3800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: Abundant
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STATE: California
                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                     OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITY: Los Angeles
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TELEFAX: (310) 277-1297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM: Mycobacterium tuberculosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
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; Pred. No. 2.5e-19;
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US-10-147-255-18
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Publication No. US20030152584A1
GENERAL INFORMATION:
APPLICANT: Horwitz, Marcus A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
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                                                                                                  TELEFAX: (310) 277-1297
INFORMATION FOR SEQ ID NO: 18:
SEQUENCE CHARACTERISTICS:
LENGTH: 48 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US/09/226,539A FILING DATE: -Inknowns APPLICATION NUMBER: US 08/447,398 FILING DATE: 23-MAY-1995 APPLICATION NUMBER: US 08/289,667 FILING DATE: 12-AUG-1994 APPLICATION NUMBER: US 08/156,358 FILING DATE: 23-NOV-1993 ATTORNEY/ACENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 15-May-2002
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
               STRANDEDNESS: <Unknown>
TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: NO
                                                                                                                                                                                         TELECOMMUNICATION INFORMATION TELEPHONE: (310) 788-5000 TELEFAX: (310) 277-1297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: NO
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ANTI-SENSE: NO
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                                                                                                                                                                                                                                                                              NAME: MacLean, Kurt A. REGISTRATION NUMBER: 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: Los Angeles
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FDTRLMRLEDEMKEGRYEVRAELPGVDPDKDVDIMVRDGQLTIKAERT 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Mycobacterium tuberculosis STRAIN: Erdman
                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: 112-272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/10/147,255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Products and Methods for Their Production and Use
                                                                                                                                                                                                                    788-5000
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                                                                                                                                                                                                                                                                                31,118
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; FRAGMENT TYPE: N-terminal; ORIGINAL SOURCE:
 ORGANISM: Mycobacterium tuberculosis; STRAIN: Erdman; SEQUENCE DESCRIPTION: SEQ ID NO: 18:
 US-10-147-255-18

Query Match
Best Local Similarity 100.0%; Pred. No. 2.5e-19; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps O; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps O; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps O; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps O; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps O; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps O; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps O; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps O; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps O; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps O; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps O; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps O; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps O; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps O; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps O; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps O; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0; Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0; Matches 0; Indels 0; Gaps 0; Matches 0; Indels 0; Gaps 0; Matches 0; Indels 0; Gaps 0; Indels 0; Gaps 0; Indels 0; Gaps 0; Indels 0; Gaps 0; Indels 0; Gaps 0; Indels 0; Gaps 0; Indels 0; Gaps 0; Indels 0; Indels 0; Gaps 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indels 0; Indel
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Title:
Perfect score:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence:
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                                                                                                                                                                                                                                                                                                     seq length: 0
seq length: 2000000000
Published_Applications_AA_New:*

1: /cgn2_6/ptodata/1/pubpaa/USO6_NEW_PUB.pep:*

2: /cgn2_6/ptodata/1/pubpaa/USO6_NEW_PUB.pep:*

3: /cgn2_6/ptodata/1/pubpaa/USO7_NEW_PUB.pep:*

4: /cgn2_6/ptodata/1/pubpaa/PCT_NEW_PUB.pep:*

5: /cgn2_6/ptodata/1/pubpaa/USO0_NEW_PUB.pep:*

6: /cgn2_6/ptodata/1/pubpaa/USIO_NEW_PUB.pep:*

7: /cgn2_6/ptodata/1/pubpaa/USIO_NEW_PUB.pep:*

8: /cgn2_6/ptodata/1/pubpaa/USO0_NEW_PUB.pep:*
        8 7 5 5 4 3 2 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   March 23, 2006, 06:17:23; Search time 3.45564 Seconds (without alignments) 1192.746 Million cell update
                                                                                                                                                                                                                                                                                                                                                                                                            169630 seqs, 28622889 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gapop 10.0 , Gapext 0.5
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736
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Maximum Match 100%
Listing first 45 summaries
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GenCore version 5.1.7 (c) 1993 - 2006 Biocceleration Ltd
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

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Result

Query

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|----------------------|--------------------|------------------|-------------------|---------------------|--------------------|--------------------|---------------------|----------------------|---------------------|-------------------|---------------------|---------------------|---------------------|--------------------|----------------------|----------------------|---------------------|---------------------|--------------------|--------------------|-------------------|------------------|-------------------|-----------------|-------------|
| 104                  | 106.5              | 109              | 109               | 110.5               | 111.5              | 118.5              | 119.5               | 121.5                | 123.5               | 124               | 125.5               | 126.5               | 126.5               | 126.5              | 127                  | 129                  | 129                 | 130                 | 132.5              | 144.5              | 736               | 736              | 736               | 736             | Score       |
| 14.1                 | 14.5               | 14.8             | 14.8              |                     |                    |                    |                     | 16.5                 | 16.8                | 16.8              | 17.1                | 17.2                |                     | 17.2               | 17.3                 | 17.5                 |                     | 17.7                |                    | 19.6               | 100.0             | 100.0            | 100.0             | •               | Match       |
| 161                  | 133                | 147              | 141               | 146                 | 150                | 156                | 128                 | 131                  | 153                 | 159               | 161                 | 161                 | 154                 | 154                | 162                  | . 155                | 149                 | 210                 | 153                | 150                | 856               | 433              | 368               | 331             | Length      |
| 7                    | 7                  | 7                | 7                 | 7                   | 7                  | 7                  | 7                   | 7                    | 7                   | 7                 | 7                   | 7                   | 7                   | 7                  | 7                    | 7                    | 7                   | 7                   | 7                  | 7                  | 7                 | 7                | 7                 | 7               | BB          |
| US-11-096-568A-14759 | US-11-087-099-8784 | US-11-074-176-14 | US-11-074-176-304 | US-11-087-099-11787 | US-11-087-099-1077 | US-11-087-099-5432 | US-11-087-099-11932 | US-11-096-568A-21408 | US-11-087-099-12190 | -11               | US-11-087-099-11804 | US-11-087-099-10976 | US-11-087-099-10259 | US-11-087-099-8558 | US-11-096-568A-16708 | US-11-096-568A-21407 | US-11-087-099-11382 | US-11-087-099-11233 | US-11-087-099-7830 | US-11-087-099-2558 | US-11-201-519-12  | US-11-201-519-14 | US-11-201-519-24  | US-11-201-519-4 | ID          |
| Sequence 14759, A    | 8784               | 14, 7            | Sequence 304, App | Sequence 11787, A   | 1077,              | Sequence 5432, Ap  | Sequence 11932, A   | Sequence 21408, A    | 12190,              | Sequence 7013, Ap | Sequence 11804, A   | Sequence 10976, A   |                     | Sequence 8558, Ap  | 16708,               | Sequence 21407, A    | ,                   | 11233,              | Sequence 7830, Ap  | Š                  | Sequence 12, Appl | 14,              | Sequence 24, Appl |                 | Description |

| 45                 | 44                   | 43                   | 42                   | 41                 | 40               | 39                 | 38                   | 37                   | 36                 | 35                   | 34                   | 33                  | 32                  | 31                  | 30                  | 29                  | 28                  | 27                  | 24                    |
|--------------------|----------------------|----------------------|----------------------|--------------------|------------------|--------------------|----------------------|----------------------|--------------------|----------------------|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----------------------|
| 70.5               | 71                   | 71                   | 71.5                 | 71.5               | 74               | 75.5               | 78                   | 78.5                 | 79                 | 88                   | 91                   | 92                  | 92                  | 94.5                | 94.5                | 103                 | 103                 | 103                 | 107                   |
| 9.6                | 9.6                  | 9.6                  | 9.7                  | 9.7                | 10.1             | 10.3               | 10.6                 | 10.7                 | 10.7               | 12.0                 | 12.4                 | 12.5                | 12.5                | 12.8                | 12.8                | 14.0                | 14.0                | 14.0                | 1.1.                  |
| 505                | 225                  | 149                  | 1401                 | 242                | 210              | 205                | 136                  | 297                  | 175                | 124                  | 147                  | 239                 | 214                 | 187                 | 159                 | 154                 | 153                 | 150                 | 1                     |
| 7                  | 7                    | 7                    | 7                    | σ                  | 7                | σ                  | 7                    | 7                    | σ                  | 7                    | 7                    | 7                   | 7                   | 7                   | 7                   | 7                   | 7                   | 7                   | ٠                     |
| US-11-087-099-2851 | US-11-096-568A-15189 | US-11-096-568A-15190 | US-11-096-568A-28512 | US-10-467-657-7306 | US-11-010-239-77 | US-10-878-556A-199 | US-11-096-568A-14425 | US-11-096-568A-18592 | US-10-821-234-1543 | US-11-096-568A-21036 | US-11-096-568A-21035 | US-11-096-568A-9567 | US-11-096-568A-9568 | US-11-096-568A-7625 | US-11-096-568A-7626 | US-11-096-568A-6322 | US-11-096-568A-6323 | US-11-096-568A-6324 | CC FF 070 700% FF.700 |
| Sequence           | Sequence             | Sequence             | Sequence             | Sequence           | Sequence         | Sequence           | Sequence             | Sequence             | Seguence           | Sequence             | Seguence             | Sequence            | COMMON                |
| 2851, Ap           | 15189, A             | 15190, A             | 28512, A             | 7306, Ap           | 77, Appl         | 199, App           | 14425, A             |                      | 1543, Ap           | 21036, A             | 21035, A             | 9567, Ap            | 9568, Ap            | 7625, Ap            | 7626, Ap            | 6322, Ap            | 6323, Ap            | 6324, Ap            | F                     |

# ALIGNMENTS

RESULT 1 US-11-201-519-4

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APPLICANT: LILLAUN, LONGER PELICANT: APPLICANT: Campos-Neto, Antonio APPLICANT: Campos-Neto, Antonio APPLICANT: Corixa Corporation: TITLE OF INVENTION: Fusion Protiens of Mycobacterium tuberculosis Antigens TITLE OF INVENTION: Fusion Protiens of Mycobacterium tuberculosis Antigens TITLE OF INVENTION: and Their Uses
FILE REFERENCE: 014058-009020US
CURRENT APPLICATION NUMBER: US/11/201,519
CURRENT FILING DATE: 2005-08-10
PRIOR APPLICATION NUMBER: US/99/287,849
PRIOR FILING DATE: 2003-02-05
PRIOR APPLICATION NUMBER: US/99/287,849
PRIOR APPLICATION NUMBER: US 08/818,112
PRIOR APPLICATION NUMBER: US 08/818,112
PRIOR APPLICATION NUMBER: US 08/942,578
PRIOR APPLICATION NUMBER: US 08/942,578
PRIOR APPLICATION NUMBER: US 09/025,197
PRIOR APPLICATION NUMBER: US 09/025,197
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PRIOR APPLICATION NUMBER: US 09/0
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Publication No. US20060034764A1
GENERAL INFORMATION:
                                                                                                                                                                                                          Query Match
Best Local (
                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Reed, APPLICANT: Skeik-APPLICANT: Dillo APPLICANT: Alder APPLICANT: Campo
                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
                                           1 MATTLPVQRHPRSLFPEFSELFAAFPSFAGLRPTFDTRLMRLEDEMKEGRYEVRAELPGV
                                                                                                                                                                                                          Similarity
    MATTLPVQRHPRSLFPEFSELFAAFPSFAGLRPTFDTRLMRLEDEMKEGRYEVRAELPGV
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Skeiky, Yasir A.W.
Dillon, Davin C.
                                                                                                                                                         100.0%; Score 736; DB 7; llarity 100.0%; Pred. No. 2.2e-68; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                        Length 331;
                                                                                                                                                                  Indels
                                                                                                                                                              0
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    67
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APPLICANT: Skeiky, Yasir A.W.
APPLICANT: Skeiky, Yasir A.W.
APPLICANT: Dillon, Davin C.
APPLICANT: Dillon, Davin C.
APPLICANT: Dillon, Mark
APPLICANT: Corixa Corporation
TITLE OF INVENTION: Pusion Protiens of Mycobacterium tuberculosis Antigens
TITLE OF INVENTION: Pusion Protiens of Mycobacterium tuberculosis Antigens
FILE REFERENCE: 014058-009020US
CURRENT APPLICATION NUMBER: US/11/201,519
CURRENT FILING DATE: 2003-02-05
PRIOR APPLICATION NUMBER: US/09/287,849
PRIOR APPLICATION NUMBER: US/09/287,849
PRIOR APPLICATION NUMBER: US/09/287,849
PRIOR APPLICATION NUMBER: US/09/287,849
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PRIOR APPLICATION NUMBER: US/09/287,849
PRIOR APPLICATION NUMBER: US/09/28,940
PRIOR APPLICATION NUMBER: US/09/25,197
PRIOR APPLICATION NUMBER: US/09/25,197
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PRIOR APPLICATION NUMBER: US/09/25,197
PRIOR APPLICATION NUMBER: US/09/25,197
PRIOR APPLICATION NUMBER: US/09/25,197
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US-11-201-519-14
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Sequence 14, Application US/11201519
Publication No. US20060034764A1
GENERAL INFORMATION:
APPLICANT: Reed, Steven G.
APPLICANT: Skeiky, Yasir A.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: Pate
SEQ ID NO 24
LENGTH: 368
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local (
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Publication No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OTHER INFORMATION: Description of Artificial Sequence:tri-fusion
                                                                                                                                                                                                                             129
                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          144;
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                                                                                                                                                                                                                                                            ILTVSVAVSEGKPTEKHIQIRSTN 144
                                                                                                                                                                                                                                                                                                                           DPDKDVDIMVRDGQLTIKAERTEQKDFDGRSEFAYGSFVRTVSLPVGADEDDIKATYDKG
                                                                                                                                                                                                                                                                                                                                                         DPDKDVDIMVRDGQLTIKAERTEQKDFDGRSEFAYGSFVRTVSLPVGADEDDIKATYDKG
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vo. US20060034764A1
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Pred. No. 2.5e-68;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 368;
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CURRENT APPLICATION NUMBER: US/11/201,519
CURRENT FILING DATE: 2005-08-10
PRIOR APPLICATION NUMBER: US/10/359,460
PRIOR FILING DATE: 2003-02-05
PRIOR APPLICATION NUMBER: US/09/287,849
PRIOR APPLICATION NUMBER: US/09/287,849
PRIOR FILING DATE: 1999-04-07
PRIOR PPLICATION NUMBER: US 08/818,112
PRIOR PPLICATION NUMBER: US 08/818,112
PRIOR APPLICATION NUMBER: US 08/942,578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-11-201-519-12
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                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 12, Application US/11201519
Publication No. US20060034764A1
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APPLICANT:
APPLICANT:
                                                                                                                                                                                              APPLICANT: Corixa Corporation
TITLE OF INVENTION: Fusion Protiens of Mycobacterium tuberculosis Antigens
TITLE OF INVENTION: and Their Uses
FILE REFERENCE: 014058-00902005
                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Reed, APPLICANT: Skei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION NUMBER: US 09/223,040 PRIOR FILING DATE: 1998-12-30 NUMBER OF SEQ ID NOS: 46
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PRIOR FILING DATE: 1997-03-13
PRIOR APPLICATION NUMBER: US 08/942,578
PRIOR FILING DATE: 1997-10-01
PRIOR APPLICATION NUMBER: US 09/025,197
PRIOR APPLICATION NUMBER: US 09/056,556
PRIOR APPLICATION NUMBER: US 09/056,556
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILE REFERENCE: 014058-009020US
CURRENT APPLICATION NUMBER: US/11/201,519
CURRENT FILING DATE: 2005-08-10
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: Fusion Protiens of Mycobacterium tuberculosis TITLE OF INVENTION: and Their Uses
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 433
TYPE: PRT
ORGANISM: Artificial Sequence
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Dillon, Davin C.
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Campos-Neto, Antonio
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                                                                                                                                                                                                                                                                                                                                                                                  Steven G.
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Pred. No. 3.1e-68;
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GENERAL INFORMATION:
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RESULT 6
US-11-087-099-7830
Sequence 7830, Application US/11087099
Publication US20060041961A1
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US-11-087-099-2558
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Publication No. US20060041961A1
GENERAL INFORMATION:
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NUMBER OF SEQ ID NOS: 46
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 12
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SEQ ID NO 2558
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Best Local Similarity
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Best Local Similarity
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TITLE OF INVENTION: Genes and Uses for Plant Improvement
FILE REFERENCE: 38-21(53450)B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
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TYPE: PRT
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TYPE: PRT
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APPLICATION NUMBER: US 09/025,197
FILING DATE: 1998-02-18
APPLICATION NUMBER: US 09/056,556
FILING DATE: 1998-04-07
APPLICATION NUMBER: US 09/223,040
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                                                                                                    LTVTVPKTEVKKPEVKAIEI 148
                                                                                                                                                                    KVEVEDGNVLVVSGERTKEKEDKNDKWHRVERSSGKFVRRFRLPEDAKVEEVKAGLENGV
                                                                                                                                                                                                    DIMVRDGQ-LTIKAERTEQKDFDG----RSEFAYGSFVRTVSLPVGADEDDIKATYDKGI
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Pred. No. 7.6e-08;
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Pred. No. 7.8e-68;
; Mismatches 0;
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; SEQ ID NO 11233
; LENCTH: 210
; TYPE: PRT
; ORGANISM: Papaver somniferum
US-11-087-099-11233
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US-11-087-099-11382
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US-11-087-099-11233
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NUMBER OF SEQ ID NOS: 12464
SEQ ID NO 11382
LENGTH: 149
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                                                    APPLICANT: Abad, Mark S. et al.
TITLE OF INVENTION: Genee and Uses for Plant
FILE REFERENCE: 38-21 (53450)B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
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TITLE OF INVENTION: Genes and Uses for Plant Improvement FILE REFERENCE: 38-21(53450)B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
NUMBER OF SEQ ID NOS: 12464
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TITLE OF INVENTION: Genes and Uses for Plant Improvement
FILE REFERENCE: 38-21 (53450) B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
NUMBER OF SEQ ID NOS: 12464
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ORGANISM: Funaria hygrometrica
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nes 36; Conserva
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                                                                                                                                                                                                                                                                                                                                                                                     74
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                                                                                                                                                                                                                                                                                                                                                                                                                           57 LPGVDPDKDVDIMVRDGQ-LTIKAER-----TEQKDFDGRSEFAYGSFVRTVSLPVGADE 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13 SLFPEFS----ELFAAFPSFAG------LRPTFDTRLMRLEDEMKEGRYEVRAE
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38.7%;
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30.5%; Pred. No. 3.8e-06;
tive 23; Mismatches 58
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Pred. No. 1.4e-06;
B; Mismatches 32
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RESULT 10
US-11-096-568A-16708
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US-11-096-568A-21407
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; ORGANISM: Oryza sativa (japonica cultivar-group)
US-11-087-099-11382
            APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence-Determined DN
TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 16708
                                                                                                                                                                                                  Sequence 16708, Application US/11096568A Publication No. US20060048240A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 21407
LENGTH: 155
                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
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FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEO ID NOC. 2447
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURE: misc_feature
LOCATION: (1)...(155)
OTHER INFORMATION: Ceres Seq. ID no.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: PRT
ORGANISM: Zea mays subsp.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                          111 DDIKATYDKGILTVSVAVSE-GKPTEKHIQI 140 |::|| : |:|| :| | | | |:| | 123 DEVKAGLENGVLTVTVPKTEVKKPEVKAIEI 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         133 PKAEVKKPEVKAIEI 147
                                                                                                                                                                                                                                                                                                                                                                                                            64 DLPGIKKE-EVKVEVEDGNVLVISGKRSREEEDKNDKWHRVERSSGQFMRRFRLPENAKV 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 Similarity 33.3
45; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       45;
                                                                                                                                                                                                                                                                                                                                                                                                                                             ELPGVDPDKDVDIMVRDGQLTI----KAERTEQKDFD--GRSEFAYGSFVRTVSLPVGADE 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VSRRSSNVFDPFSLDLWDPFDMFRSIVPSAASSGGGSETAAFANARVDWKETPEAHVFKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VORHPRSLFPEFS-ELFAAFPSFAGLRP-----TFDTRLMRLEDEMKEGRYEVRA 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AVSE-GKPTEKHIQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DGQ-LTIKAERTEQKDFDG----RSEFAYGSFVRTVSLPVGADEDDIKATYDKGILTVSV 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RSLVPATSDRDTA--AFANARVDW-----KETPES-HVFKADLPGVKKE-EVKVEVE 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EGNVLVISGORSKEKEDKNDKWHRVERSSGOFMRRFRLPENAKVDOVKASMENGVLTVTV 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17.5%; Score 129; DB 7; llarity 29.8%; Pred. No. 3.2e-06; Conservative 27; Mismatches 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17.5%; Score 129; DI
33.3%; Pred. No. 3e-(
htive 24; Mismatches
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                                                                                                                                            DNA
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                                                                                                                                        Fragments
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
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                                                                                                                                            and
                                                                                                                                          Corresponding Polypeptides
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US-11-087-099-8558
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US-11-087-099-8558
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NUMBER OF SEQ ID NOS:
SEQ ID NO 10259
LENGTH: 154
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Abad, Mark S. et al.
TITLE OF INVENTION: Genes and Uses for Plant Improvement
FILE REFERENCE: 38-21(53450)B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
NUMBER OF SEQ ID NOS: 12464
SEQ ID NO 8558
LENGTH: 154
TYPE: PRT
                                                                                                                                                                                Sequence 10259, Application US/11087099 Publication No. US20060041961A1 GENERAL INFORMATION:
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Best Local Similarity
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Best Local (
                                                                             APPLICANT: Abad, Mark S. et al.
TITLE OF INVENTION: Genes and Uses for Plant Improvement
FILE REFERENCE: 38-21(53450)B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: PRT ORGANISM: FEATURE:
                                                                                                                                                                                                                                                                                                                                                                  118 DKGILTVSVAVSE-GKPTEKHIQI 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       156 KSIQI 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            136 KHIQI 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          81
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                                                                                                                                                                                                                                                                                                                                                                                                            70 E-EVKVEVEDGNVLQISGERSKEHEEKNDKWHRVERSCGKFMRRFRLPENAKVDQVKANM 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13 SLPPBFS----ELFAAFPSFAGLRPT-----FDTRLMRLEDEMKEGRYEVRAELPGVDP 62 :: | | | | : : : : |:|||:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12 NVFDPFSLDIWDPFEGFSAVASVPPSARETTAFAT--ARIDWKETPEAHIFKADLPGLKK 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       46;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                    DKDVDIMVRDGQ-LTIKAERT----EQKDFDGRSEFAYGSFVRTVSLFVGADEDDIKATY 117
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31.2%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                              152
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55;

Indels Length 154;

19;

Gaps

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NAME/KEY: misc_feature
LOCATION: (1)..(162)
OTHER INFORMATION: Ceres Seq. ID no. 12353810
                                                                                                                                         25 FPSFAGLRPTFDTRLM---RLEDEMKEGRYEVRAELPGVDPDKDVDIMVRDGQ-LTIKAE 80
RSKEQEEKROTWHRVERSSGKFLRRFRLPENARTEQISASMENGVLTVTVPKEEAKKADV
                                           RT----EQKDFDGRSEFAYGSFVRTVSLPVGADEDDIKATYDKGILTVSVAVSEGKPTE-
                                                                                           FPSFGGTTTSSETAAFAGARVDWKETPEAHVFKTDVPGLKKE-EVKVELEDGNVLQISGE
                                                                                                                                                                                                            Score 127; DB 7;
Pred. No. 5.4e-06;
                                                                                                                                                                                         51;
                                                                                                                                                                                                                               Length 162;
                                                                                                                                                                                         Indels 10;
                                                                                                                                                                                       Gaps
    155
                                                135
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Sequence 11804, Application US/11087099

; Bublication No. US20060041961A1

; GENERAL INFORMATION:
   APPLICANT: Abad, Mark S. et al.
   TITLE OF INVENTION: Genes and Uses for Plant Im;
   FILE REFERENCE: 38-21(53450) EP
   CURRENT APPLICATION NUMBER: US/11/087,099
   CURRENT FILING DATE: 2005-03-22

; NUMBER OF SEQ ID NOS: 12464
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US-11-087-099-10976
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                                                               US-11-087-099-11804
                                                                                                                                                                                                                                                                                                                                              RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; ORGANISM: Castanea sativa
US-11-087-099-10259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; SEQ ID NO 10976
; LENGTH: 161
; TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 10976, Application US/11087099 Publication No. US20060041961A1
Query Match
Best Local Similarity
                                                                                                                                    SEQ ID NO 11804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM: Oryza sativa (japonica cultivar-group);-11-087-099-10976
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TITLE OF INVENTION: Genes and Uses for Plant Improvement
FILE REFERENCE: 38-21 (53450) B Use
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
NUMBER OF SEQ ID NOS: 12464
                                                                        LENGTH: 161
TYPE: PRT
ORGANISM: Chenopodium rubrum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13 SLFPEFS----ELFAAFPSFAGLRPT-----FDTRLMRLEDEMKEGRYEVRAELPGVDP 62
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RSSGSIFPSFPRGTSSETAA----FAG-----ARIDWKETPEAHVFKADVPGLKKE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ENGVLTVIVPKEEQKKTEVKSIBI 152
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                                                                                                                                                                                                                                                                                                                                                                                                        NGVLTVTVPKEEPKKPDVKSIQV 159
                                                                                                                                                                                                                                                                                                                                                                                                                                   KGILTVSVAVSE-GKPTEKHIQI 140
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -EVKVEVEDGNVLQISGERSKEQEEKTDKWHRVERSSGKFLRRFRLPENTKPEQIKASME 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RHPRSLFPEF----SELFAAFPSFAGLRPTFDTRLMRLEDEMKEGRYEVRAELPGVDPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17.2%; Score 126.5; larity 32.2%; Pred. No. 6e-(Conservative 22; Mismatches
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     17.1%;
30.1%;
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%; Pred. No. 5.7e-06;
25; Mismatches 54;
     Score 125.5; DB 7
Pred. No. 7.7e-06;
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US-11-096-568A-7013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: Sequence-Determined DNA Fragments and Corresponding Polypeptides
TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592F052
CURRENT APPLICATION UNMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 7013
LENGTH: 159
TYPE: PRT
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APPLICANT: Alexandrov, Nickolai et al.
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| Abu26085 Protein e | Adj93781 AChE1 pro | Abo68223 Pseudomon | Abu35824 Protein e | Aaw31346 Rat tumou | Abu34712 Protein e | Abu36645 Protein e | Abp66056 Bifidobac | Adv82013 Streptoco | Adv79863 Streptoco | Adv88610 Streptoco | Abp26703 Streptoco | Abull385 Protein e | Adj93777 AChEl pro | Abo82069 Pseudomon | Abu34318 Protein e | Abm85743 Human pro | Adm92111 S pneumon | Abu00998 S. pneumo | Aay81711 Streptoco | Abm86609 Rice abio |

# ALIGNMENTS

08-JUL-2003; 2003WO-DK000477 Mycobacterium tuberculosis. mycobacterial infection; vaccine; tuberculosis;
mycobacterium tuberculosis; immunisation; antibacterial; gene therapy; M. tuberculosis low oxygen induced antigen Rv2032 22-APR-2004 ADI37304; 22-JAN-2004. WO2004006952-A2 ADI37304 standard; protein; 331 13-JUL-2002; 2002DK-00001098 (STAT-) STATENS SERUM INST. oxygen induced (first entry) antigen. \$ SEQ Ħ NO:25

Andersen P, Rosenkrands I, Stryhn A

WPI; 2004-122778/12. ADI37349.

Use of one or more polypeptides or their fragments, which are expressed during the latent stage of the mycobacterial infection, and/or nucleic acids encoding the polypeptides, for a therapeutic vaccine against tuberculosis.

Claim 3; SEQ ID NO 25; 76pp; English

The present invention describes polypeptides or their fragments, which are expressed during the latent stage of a mycobacterial infection, and/or nucleic acids encoding the polypeptides, which are useful for creating a therapeutic vaccine against tuberculosis. Also described: (; a therapeutic vaccine against tuberculosis comprising one or more polypeptides; (2) a method for treating an animal, including a human being, with tuberculosis caused by virulent mycobacteria, e.g. by Mycobacterium tuberculosis, M. africanum or M. bovis; (3) a method for immunising an animal, including a human being, against tuberculosis Ξ

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   WPI; 2004-122778/12.
N-PSDB; ADI37360.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mycobacterial infection; vaccine; tuberculosis;
Mycobacterium tuberculosis; immunisation; antibacterial; gene therapy;
                                                                                                                                                                                                                                                                       08-JUL-2003; 2003WO-DK000477
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mycobacterium tuberculosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           M. tuberculosis low oxygen induced antigen Rv3127
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                                                                                           Andersen P,
                                                                                                                                                                                                             13-JUL-2002; 2002DK-00001098
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Pred. No. 4.1e-172;
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Use of one or more polypeptides or their fragments, which are expressed during the latent stage of the mycobacterial infection, and/or nucleic acids encoding the polypeptides, for a therapeutic vaccine against
                                                                                                                                                                   tuberculosis.
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Claim 3; SEQ ID NO 36; 76pp; English

a therapeutic vaccine against tuberculosis comprising one or more CC polypeptides; (2) a method for treating an animal, including a human CC being, with tuberculosis caused by virulent mycobacteria, e.g. by CC Mycobacterium tuberculosis, M. africanum or M. bovis; (3) a method for CC caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis CC caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis CC caused by virulent mycobacteria; in an animal, including a human being; (5) a method for diagnosing previous or ongoing infection with a virulent mycobacterium; and (6) a method of diagnosing Mycobacterium tuberculosis CC mycobacterium; and (6) a method of diagnosing Mycobacterium tuberculosis can dean be used in vaccines and in gene therapy. The polypeptides are useful for the manufacture of a therapeutic vaccine for treating an CC individual who is infected by a virulent mycobacterium, e.g. M. CC tuberculosis, and who is not vaccinated with BCG against tuberculosis. CC The present sequence represents a low oxygen induced antigen, which is covered to the manufacture of the present invention. The present invention describes polypeptides or their fragments, where expressed during the latent stage of a mycobacterial infection, and/or nucleic acids encoding the polypeptides, which are useful for creating a therapeutic vaccine against tuberculosis. Also described described: (1)

Sequence 344 AA;

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                      Antigen; diagnosis;
                                                M. tuberculosis recombinant antigen protein LSER-12
                                                                         05-NOV-1999
                                                                                                AAY39048
              vaccine;
                                                                                                                       AAY39048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
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              immunity.
                                                                                                                         standard;
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                                                                                                                                                                                   PLAAVPAPTPRRPLDSVLQIR
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                                                                         (first
                                                                                                                      protein;
                        detection; infection; antibody; immunisation;
                                                                         entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             53.3%;
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; Pred. No. 2.6e-87;
39; Mismatches 96
                                                                                                                          104
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RESULT 4
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Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This invention describes novel recombinant antigens and their encoding nucleic acids derived from Mycobacterium tuberculosis. The novel polypeptides are useful for detecting M. tuberculosis infection in a biological sample by detecting antibodies which bind with the polypeptides, and are useful as vaccines for immunizing against M. tuberculosis infection. The new detection methods are needed as current vaccination strategies do not provide 100% immunity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Reed SG,
Vedvick
                                                                                                                                                                                                                                                                                                                                                                                                                                                   M. tuberculosis antigen LSER-12 amino acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    05-NOV-1999
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                                                                             18-FEB-1998;
05-MAY-1998;
                                                                                                                                                  17-FEB-1999;
                                                                                                                                                                                                      26-AUG-1999.
                                                                                                                                                                                                                                                    W09942076-A2
                                                                                                                                                                                                                                                                                                  Mycobacterium
                                                                                                                                                                                                                                                                                                                                                                        Mycobacterium tuberculosis; M. tuberculosis; antigen; immunimmunotherapy; diagnosis; immunisation; vaccine; infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAY39191 standard; protein; 104
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05-MAY-1998;
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                              (CORI-) CORIXA
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S, Twardzik
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Page 268-269; 323pp; English.
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                                                                                                                                                                                                                                                                                                     tuberculosis
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100.0%; Pre
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present invention describes polypeptides comprising an immunogenic part of a Mycobacterium tuberculosis antigen (Ag). Also described are vaccines and fusion protein containing M. tuberculosis Ag's. M. tuberculosis Ag's, DNAs encoding them, derived fusion proteins and other polypeptides fragments, can be used in pharmaceutical compositions or vaccines to generate a protective or therapeutic immune response to M. tuberculosis and as reagents in skin tests for diagnosis of tuberculosis. Ag can induce proliferation of, or cytokine secretion by T, B or natural killer cells and/or macrophages in tuberculosis-immune subjects. AAZ19460 and AAX39083 to AAX39225 are used in the exemplification of the present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         M. tuberculosis low oxygen induced antigen Rv3131
                                             Use of one or more polypeptides or their fragments, which are expressed during the latent stage of the mycobacterial infection, and/or nucleic acids encoding the polypeptides, for a therapeutic vaccine against
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mycobacterial infection; vaccine; tuberculosis;
Mycobacterium tuberculosis; immunisation; antibacterial; gene therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 104 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-PSDB; AAZ19385.
                                        acids encoding
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Vedvick TS,
                                                                                                                                                                                                                                                                                                                                                  Andersen P,
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)B; ADI37364.
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J, Hendrickson RC;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present invention describes polypeptides or their fragments, which CC are expressed during the latent stage of a mycobacterial infection, CC and/or nucleic acids encoding the polypeptides, which are useful for CC creating a therapeutic vaccine against tuberculosis. Also described: (1) a method for treating an animal, including a human CC polypeptides; (2) a method for treating an animal, including a human CC polypeptides; (1) a method for treating an animal, including a human being, against tuberculosis caused by virulent mycobacteria, e.g. by CC mycobacterium tuberculosis, M. africanum or M. bovis; (3) a method for CC caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis CC caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis CC caused by virulent mycobacteria in an animal, including a human being; (5) a method for diagnosing previous or ongoing infection with a virulent mycobacterian; and (6) a method of diagnosing Mycobacterium tuberculosis infection in a subject. The polypeptides have antibacterial activities, CC and can be used in vaccines and in gene therapy. The polypeptides are CC infection in a subject. The polypeptides have antibacterian an CC individual who is infected by a virulent mycobacterium, e.g. M. CC useful for the manufacture of a therapeutic vaccine for treating an CC individual who is infected by a virulent mycobacterium, e.g. M. CC useful to the present sequence represents a low oxygen induced antigen, which is CC used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
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Best Local
                                       Streptomyces lavendulae
                                                                                                   chronic
                                                                                                                        anti-inflammatory; immune-enhancer;
                                                                                                                                        Mitomycin; biosynthesis; mitosane ring system; antibiotic; anti-cancer;
                                                                                                                                                                             S. lavendulae MmcX encoded protein sequence
                                                                                                                                                                                                                       19-JAN-2001
                                                                                                                                                                                                                                                                                                 AAB32537 standard; protein;
    WO200053737-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 332
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IPRRRTDRRAYSCWPVPGGDIALMAARAARGGVMLR-QVSALDRMKAIVAQAVLD---HV
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Pred. No. 9.5e-35;
                                                                                                 disease; respiratory inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                     immunosuppressant; asthma;
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Best Local S
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                 anti-inflammatory agents, anti-cancer agents, immune-enhancers, anti-inflammatory agents, anti-cancer agents, immune-enhancers, immunosuppressants, agents to treat asthma, chronic obstructive pulmonary disease as well as other disease involving respiratory inflammation, or cholesterol-lowering agents or as crop protection agents (e.g. fungicides or insecticides) as well as bipolymers, e.g., in packaging or biomedical applications, or to engineer PHA monomer synthases. Sequences AAC55782-C5581, AAC55815-C55849 and AAB32485-B32542 represent mitomycin biosynthetic gene cluster DNA sequences and encoded proteins. Sequences AAC55812-C55814, AAC55850-C55856 and AAC55862-C55869 represent PCR primers used in the cloning of the mitomycin biosynthetic genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             antiinflammatory, cytostatic, immunomodulatory, and antibiotic activities. The nucleotide sequences are used to elucidate the molecul basis for the biosynthesis of the mitosane ring system, as well as to enginer the biosynthesis of novel natural products, e.g. antibiotics,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mitomycin biosynthetic gene cluster comprises 47 mitomycin genes spanning 55kb of DNA. The invention includes an expression cassette comprising a mitomycin biosynthetic gene operably linked to a promoter, and host cell transformed with the cassette. The nucleotide, and protein sequences and the transformed host cells of the invention result in antiasthmatic,
                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from the mitomycin biosynthetic gene cluster. Mitomycins are a group of natural products that contain a variety of functional groups, including amino benzoquinone and axiridine ring systems. The S. lavendulae mitomycin biosynthetic gene cluster comprises 47 mitomycin genes spanning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This invention relates to isolated and purified nucleic acid molecules from the mitomycin biosynthetic gene cluster. Mitomycins are a group o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Novel nucleic acid molecule comprising mitomycin biosynthetic gene cluster useful for cloning mitomycin biosynthetic genes for elucidating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N-PSDB; AAC55838.
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(MAOY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the molecular basis of mitosane ring system
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12-MAR-1999;
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                                                                                                                   217
                                                                                                                                                                                                                                                                             107
                                                                            150
                                                                                                                                                                                                161 VHAELKRRNPRNLVGGPYAVVDHDPPÄEDÄADRSRELRGPWGELDQRSADVIRYWN----
                                                                                                                                                       93
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                                                                                                                                                                                                                                                                                                                                                                        Similarity
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AFETSEG--IPHSSLVSAAESDRVTFGRDFP-----VVANTDRRPEFGHDRSKVLV
                                        YVEPPAEDDRPGGRDGWGEGHRTAVQATAMMRLAESGASAAFYWNPQRTGKACPGCLWRS 330
                                                                          RIDVIADDMRP-----ELAAASKLTESLRLYDSSYHAELFW
                                                                                                                   AHKAGADFVVVDGSSYTREGHRAIPDE--FAATEK--FADVTRW--VRSVTGLPVWWAEW 270
                                                                                                                                                       LHLASIDFSPAD---FVTEGHRLRADAILLRRTDRLPFAEPPDWDLVESQLRTTVTADTV
                                                                                                                                                                                                                                                                          PDPRHYADFARLAGVIAQRYPDIRHFLVW-----NELKGFYDEDRRRWDYEGYTRLYNL
                                                                                                                                                                                                                                                                                                               PDTMVTTDVIKSAVQLACRAPSLHNSQPWRWIAEDHTVALFLDKDR------VLYAT
                                                                                                                                                                                                                                                                                                                                                                                                                                413 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Page 390-392; 399pp; English.
                                                                                                                                                                                                                                                                                                                                                       Conservative
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                                                                                                                                                                                                                                                                                                                                                       32;
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                                                                                                                                                                                                                                                                                                                                                                                            Length 413;
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                                                                                                                                                                                                                                                                                                                                                       87;
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                                                                    CC portion of a nucleic acid molecule comprising mitomycin biosynthetic gene C cluster is disrupted (resulting in a recombinant host cell that produces CC altered levels of mitomycin relative to a corresponding nonrecombinant CC bacterial host cell), introducing exogenous DNA into a refractory CC Streptomycin strain, identifying a nucleic acid molecule that is related CC to at least a portion of a nucleic acid molecule comprising a mitomycin CC gene cluster, preparing a compound or its sall from the recombinant host CC cell and a product produced by the recombinant host cell. The nucleic CC acid encodes a MitT, MitS, MitB, MitD, MitD, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN, MitN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The invention relates to an isolated and purified nucleic acid molecule comprising a sequence having mitomycin biosynthetic gene cluster, or its variant or fragment. Also included are an expression casestte comprising the novel nucleic acid molecule (operably linked to a promoter functional in a host cell), a recombinant bacterial host cell in which at least a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New nucleic acid molecule comprising a sequence biosynthetic gene cluster, useful for enhancing antibiotics.
   Sequence 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-PSDB;
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Query Match Best Local S Matches 73

l Similarity 73; Conserv

Conservative

32;

Score 106.5; DB Pred. No. 0.081; 2; Mismatches 1

DB 7; 111;

413; 87;

the 6213 antisense sequences given in the specification where expression of the nucleic acid inhibits proliferation of a cell. Also included are: (1) a rector comprising a promoter operably linked to the nucleic acid encoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) a host cell containing the vector; (3) an isolated polypeptide or its fragment whose expression is inhibited by the

Claim

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SEQ

ID NO 48196; 1766pp; English.

invention relates to

an isolated nucleic acid comprising

any one

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candidate molecules

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New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to

Indels Length

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08-FEB-2002;
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Forsyth
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                                                                                                                                                          Human; synthetase;
                                                                                                                                                                                                           DNA encoding human synthetase
                                                                                                                                                                                                                                                                  26-APR-2001
                                                                                                                                                                                                                                                                                                                         AAB70151;
                              WO200107628-A2
                                                                               Homo sapiens
                                                                                                                                    reproduction.
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                                                                                                                                                            immune; inflammation; AIDS; infection; cancer;
                                                                                                                                                                                                                                                                                                                                                                        protein;
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                                                                                                                                                                                                                                                                                                                                                                           1176
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RESULT 10
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XX Human
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Best Local S
Matches 57
                                                                         Human; cytokine; cell proliferation; cell differentiation; gene th vaccine; peptide therapy; stem cell growth factor; haematopolesis; tissue growth factor; immunomodulatory; cancer; leukaemia;
                                                                                                                             Human protein SEQ ID NO 1931.
                                                                                                                                                        06-NOV-2001
                                                                                                                                                                                                          AAM79269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1176 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Such diseases include immune disorders such as inflammation, acquired immunodeficiency syndrome (AIDS), allergies, autoimmune diseases, infections cancers, Alzheimer's disease, reproductive disorders and cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 proliferative disorders
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; Page 89-92; 120pp; English.
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02-DEC-1999;
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57; Conserv
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erative disorders suc
                                                              system disorder;
                                                                                                                                                                                                         standard; protein; 1176
                                                                                                                                                                                                                                                                                                    -- MLSAVLLDATMAGLATC
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99US-0168858P
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WO200157190-A2 Homo sapiens.

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RESULT 11
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Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The invention relates to polynucleotides (AAK51456-AAK53435) and the encoded polypeptides (AAM80302) that exhibit activity elating to cytokine, cell proliferation or cell differentiation or which may induce production of other cytokines in other cell populations. The polynucleotides and polypeptides are useful in gene therapy, vaccines or peptide therapy. The polypeptides have various cytokine-like activities, e.g. stem cell growth factor activity, haematopoiesis regulating activity, tissue growth factor activity, immunomodulatory activity and activity, insure growth factor activity, inthe diagnosis and/or treatment of cancer, leukaemia, nervous system disorders, arthritis and inflammation. Note: Records for SEQ ID NO 2110 (AAK52581), 2111 (AAK52582) and 3666 (AAM80020) are omitted as the relevant pages from the sequence listing were missing at the time of publication
  ADL13064;
                             ADL13064 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1176 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 20; Page 4333-4335; 6221pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nucleic acids encoding polypeptides with cytokine-like activities, useful in diagnosis and gene therapy.
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19-JUL-2000;
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27-APR-2000;
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Y, Zhao QA, W
AJ, Yang Y,
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DB; AAK52402.
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                                                                                                                                                                                                                                                                        L-YGCPPDFPDEEEEEETSVKTEDIIIKDKAKGKKSKAAAKAGSSKYQWGIMKSLGLSD
                                                                                                                                                                                                                                                                                                    LPFAEPPDW-DLVESQLRTTVTADTVRIDVIADDMRPELAA---ASK----LTESLRLYD
                                                                                                   I FLVAATLRPETMFGQTNC
                                                                                                                                                         NKIKFGKRYTIYSPKDGQPCMDHDRQTGEGVGPQEYTLLKLKVLEPYPSKLSGLK--GKN
                                                                                                                                                                                   DRVTFGRDFPVVANTDRRPEFGHDRS------KVLVLSTYDNERASLLRCGE-
                                                                                                                                                                                                                 EEIVKFSEAEHWLDYFTPLAIQDLKRMGLKVDWRRSFITTDVNPYYDSFVRWQFLTLRER
                                                                                                                                                                                                                                             S---SYHAELFW-----
                                                                                                                                                                                                                                                                                                                                FPYPYMNGRLHLGHTFSLSKCEFAVGYQRLKGKCCLFPFGLHCTGMPIKACADKLKREIE 109
                                                                                                                                                                                                                                                                                                                                                           FPNP--NDPLHLA-SIDFSPADFVTEGHRLRADAIL------LRRTDR
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2000US-00560875

2000US-00598075

2000US-00620325

2000US-006254936

2000US-0064361

2000US-0063561

2000US-00693325

2000US-00728422
                                                                                                                                                                                                                                                                                                                                                                                       5.8%; Score 100.5; llarity 22.0%; Pred. No. 1.7; Conservative 38; Mismatches
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Wang D, Wang J, Zhang J,
Wejhrman T, Goodrich R;
                            protein; 1176 AA
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NKIKFGKRYTIYSPKDGQPCMDHDRQTGEGVGPQEYTLLKLKVLEPYPSKLSGLK--GKN

DRVTFGRDFPVVANTDRRPEFGHDRS-----KVLVLSTYDNERASLLRCGE-

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86 50

FPNP--NDPLHLA-SIDFSPADFVTEGHRLRADAIL------LRRTDR 124

FPYPYMNGRLHLGHTFSLSKCEFAVGYQRLKGKCCLFPFGLHCTGMPIKACADKLKREIE 109

LPFAEPPDW-DLVESQLRTTVTADTVRIDVIADDMRPELAA---ASK----LTESLRLYD 176

168

S---SYHAELFW-----SLVSAAES L-YGCPPDFPDEEEEEETSVKTEDIIIKDKAKGKKSKAAAKAGSSKYQWGIMKSLGLSD

EEIVKFSEAEHWLDYFPPLAIQDLKRMGLKVDWRRSFITTDVNPYYDSFVRWQFLTLRER

228

Matches Query Match

57;

Conservative

38;

ocal

Similarity

5.8%;

Score 100.5; | Pred. No. 1.7; Mismatches

DB 8; 87;

Length 1176; Indels

77;

Gaps

13

Sequence 1176

AA;

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CC differentially expressed in response to steroid treatment. Also included cc are the following: a high throughput method for using a cDNA to detect cdifferential expression of nucleic acids in a sample; and a high cc throughput method of screening molecules or compounds to identify a cc ligand that specifically binds a cDNA. The sample is from a subject with cc disease. The high throughput method of screening molecules or compounds to identify a cd disease. The high throughput method of screening molecules or compounds to identify a ligand that specifically binds a cDNA comprises: combining the combination with molecules or compounds under conditions to allow cc specific binding; and detecting specific binding between each cDNA and at least one molecule or compound. The molecules or compounds are regulatory cc proteins. The combination is useful for preparing a composition for compounds in the present sequence represents a human protein which is or hepatitis. The present sequence represents a human protein which is confidence data for this patent did not form part of the printed consecution but was obtained in electronic format directly from USPTO at sequence data uspto.gov/sequence.html.
QIBOTOETH ASSOCIATED WITH STETOID therapy, e.g., cirrhosis or hepatitis, comprises CDNAs that are differentially expressed in response to steroid tractions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; SEQ ID NO 793; 141pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Combination useful for preparing a composition for treating liver disorders associated with steroid therapy, e.g., cirrhosis or hep-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2004-068610/07.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hepatotropic; Gene therapy; Wilson disease; liver disorder; steroid therapy; cirrhosis; hepatitis; human; C3A liver cell.
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                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention relates to a combination comprising cDNAs that are
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--MLSAVLLDATMAGLATC

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RESULT 12
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Best Local S
Matches 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The invention relates to an aconitase protein or a modified protein having one or more amino acid deletions, substitutions or additions and having aconitase activity. The invention also relates to DNA encoding a protein of the invention. The DNA is useful for increasing the acetic acid resistance of microorganisms, preferably acetic acid bacteria belonging to Acetobacter or Gluconacetobacter genus. A microorganism containing DNA and having aconitase activity is useful for manufacturing vinegar. This sequence represents a Gluconacetobacter entanii aconitase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein of the invention.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Novel protein having aconitase activity, useful having high acetic acid concentration.
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                                                                                                                                                                           RVTFGRDFPVVANTDRRPEFGHDRSKVLVLSTYDNERASLLRCGEMLSAVLLDATMAGLA 268
                                                                                                                                                                                                                                                                                            VRIDVIADDMRPELAAASKLTESLRLYDSSYHAELFWWTGAFETSEGIPHSSLVSAAESD 208
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DRVLYATDHSGREALLG-----CGAVLDHFRVAMAAAGTTANVERFFNPNDPLHLASIDF 100
                                                       TCTLTHITELHASRDLVAALIGQPA----TPQALVRVGLAP
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   SCTNTS----NPAVLIAAGLVAKKARALGLKPKPWVKTSLAP
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                                                                                                                                                                     CC polypeptides. The proteins and their associated DNA sequences are used in the treatment, prevention and diagnosis of medical conditions caused by CC P. acnes. The disorders include SAPHO syndrome (synovitis, acne, CC pustulosis, hypertosis and osteomyelitis), uveitis and endophthalmitis. P. acnes is also involved in infections of bone, joints and the central CC nervous system, however it is particularly involved in the inflammatory CC lesions associated with acne vulgaris. A method for detecting the CC presence or absence of P. acnes in a patient comprises contacting the CC sample with a binding agent that binds to the proteins of the invention and determining the amount of bound protein in the sample. The CC specific for P. acnes proteins. These antibodies can be used to compregulate expression and activity of P. acnes polypeptides and CC downregulate expression and activity of P. acnes polypeptides and CC diagnostic agents for determining P. acnes presence, for example, by CC enzyme linked immunosorbent assay (ELISA). Note: The sequence data for this patent did not form part of the printed specification, but was CC obtained in electronic format directly from WIPO at
Matches
                                                           Query Match
                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 1; SEQ ID NO 9340; 1069pp; English.
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02-JUN-2000; 2000US-0208841P
07-JUL-2000; 2000US-0216747P
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequences AAU39105-AAU68017 represent Propionibacterium acnes
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Propionibacterium acnes polypeptides and nucleic acids useful for vaccinating against and diagnosing infections, especially useful for
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                                 Similarity
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Score 97.5; Di
Pred. No. 0.85
33; Mismatches
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129;
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Indels 109;
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The invention relates to an isolated polynucleotide (ACF64435-ACF64733) encoding a Propionibacterium acnes protein. The invention also relates to polypeptides encoded by the polynucleotides (ABM55624-ABM64536) and to immunogenic fragments of P. acnes polypeptides. The invention additionally encompasses expression vectors and host cells comprising a polynucleotide of the invention; antibodies against polypeptides of the invention; a method for stimulating an immune response specific for a P. acnes polypeptide and an isolated T cell population comprising T cells prepared via this method; a vaccine composition (comprising P. acnes polypeptides, antibodies, fusion proteins, T cell populations, or antigen-presenting cells that express the polypeptide); a method and kit for detecting or determining the presence or absence of P. acnes in a patient; and a method for inhibiting the development of P. acnes in a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Example 1; SEQ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LRLYDSSYHAELFWWTGAFETSEGIPHSSLVSAAESDRVTFGRDFPVVANTDR-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wang S, Jen S, Lou
Vallieve-Douglass J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Skeiky YAW,
ng S, Jen S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
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Benson DR,
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Jones R, Carte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
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Best Local S
Matches 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      patient. The P. acnes polypeptides, polynucleotides, antibodies, fusion proteins, T cell populations or antigen-presenting cells that express the polypeptides are useful for diagnosing, preventing or treating acne vulgaris, or for stimulating an immune response specific for a P. acnes protein. The polynucleotides can also be used as probes or primers for nucleic acid hybridisation. The vaccine composition is useful for the stimulation of an immune response against P. acnes, or for treating acne, and the kit is useful for performing a diagnostic assay. The present sequence represents a polypeptide predicted to be encoded by an ORF (open reading frame) contained within the P. acnes polynucleotides of the invention. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 459 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WIPO at
381
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                                       288
                                                                                                                                                                    264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    70 FRVAM-AAAGTTANVERFPNPNDPLHLASIDFSPADFVTEGH----RLRADAILLRRTDR 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                          DATMAGLATCTLTHITELHA-----
                                                                                                                                                                                                                                                                                                                                                                                  LPFAEPPDWDLVESQLRTTVTADTVRI------DVIADD---MRPELAAASKLTES 171
                                                                                                                                                                                                                                                                                                                                                                                                                            YTVAVDAAHGITTGIDAVQRARTARVLADPSSTPSDLVRPGHVLPLRARAGGVLERRG--
LTNNPAKAEALRDGGL--EVTMSPLETSTRPEDERY-LRTKRDR
                                       LIGOPATPOALVRVGLAPEMEEPPPATPRRPIDEVFHVRAKDHR
                                                                                   LRDHEGRATGLLNKÍAAYKÁQDGGLDTVDAQTHLGLPVDAREYGAAVAILANIGITSVRL 380
                                                                                                                                                                    LLVGEKGIDADDGGPAWVRVHSECLTGDALGSLRCD---CGDQLAAAQQHVCRHGGAIIL
                                                                                                                                                                                                                                                                                               LRLYDSSYHAELFWWTGAFETSEGIPHSSLVSAAESDRVTFGRDFPVVANTDR-----
                                                                                                                                                                                                                                                                                                                                         -----HTEAAVDLARLAGLEPVGLIGELVGDDGMCLRADAIADLARTEG
                                                                                                                                                                                                                                                   LALTTID----QLAQWRQAHDPGPAVPTQRVTALASAHLPTRHGQFAITGYRDNCTGVEHV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5.7%;
                                                                                                                                                                                                            --- RPEFGHDRSKVLVLSTYDNERASLLRCGEMLS------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             33,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 97.5;
Pred. No. 0.
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                                                                                                                          SRDLVAA-----
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arthritis; cytostatic; immunomodulator; nootropic; neuroprotective; antiparkinsonian; antidiabetic; immunosuppressive; dermatological;
                                                                                                                                                                                                            Human; genome mapping; gene therapy; food supplement; virus; fungus; cell-proliferative disorder; neurodegenerative disease; bacterial; Parkinson's disease; Alzheimer's disease; autoimmune disease; multiple sclerosis; diabetes; genetic disorder; wound; burn; infection;
                                                                                                                                                                                                                                                                                                                                                                                               Human polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABP69805 standard; protein; 585
                                                                      antiarthritic
                                                                                                        haemostatic; vulnerary;
sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                   SEQ ID NO 1852
                                                                                                        fungicide; antibacterial; virucide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₹
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protozoacide;

05-MAR-2001; 2001US-00799451 05-MAR-2002; 2002WO-US005095 12-SEP-2002 WO200270539-A2

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Search completed: March 23, 2006, 05:10:48
Job time : 90.0019 secs
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                                                                                                                                  중 음 중
                                                                                                                                                                                                                                                                                          음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention relates to an isolated polynucleotide (I) comprising a CC nucleotide sequence selected from any of 948 sequences (ABZ11119-CC ABZ12066) or their mature protein coding portion, active domain coding protein or complementary sequences. The polynucleotides are useful for complementary sequences. The polynucleotides are useful for concern or complementary sequences. The polynucleotides are useful for concern or complementary sequences. The polynucleotides are useful for concern or complementary sequences. The polynucleotides are useful for concern or complementary sequences and social sequences. The concern of complement of complementary and for treating cell-composition of complements of concern or compositions of concern or complementary diseases (Parkinson's cor Alzheimer's disease), autoimmune diseases (multiple sclerosis, cor Alzheimer's disease), autoimmune diseases (multiple sclerosis, cor alzheimer's disease), autoimmune diseases (multiple sclerosis, cor alzheimer's diseases), autoimmune diseases (multiple sclerosis, cor alzheimer's diseases), autoimmune diseases (multiple sclerosis, cor alzheimer's diseases), autoimmune diseases (multiple sclerosis, cor constitutions (bacterial, burns, incision, ulcers, liver cor lung fibrosis, infections (bacterial, viral, fungal, parasitic), cor arthritis, etc. Note: The sequence data for this patent did not form part cof the printed specification, but was obtained in electronic format cor directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
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Best Local Similarity
Matches 41; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tang YT,
Xue AJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New polynucleotides comprising sequences assembled from expressed sequence tags (ESTs), useful for treating cell-proliferative, neurodegenerative, autoimmune, genetic, myeloid or lymphoid, or pior coagulation disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 585 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 9; SEQ ID NO 1852; 1012pp + Sequence Listing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2002-759812/82.
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                                                                                                                                                                                                                                                                                                       148
                                                                                                                                                                                                                                                                                                                                                      187 TGAFETSEGIPHSSLVSAAESDRVTFGRDFPVVANTDRRPEFGHDR-SKVLVLSTYDNER 245
                                                                                                                                                                                                                                                      246 ASLLRCGEMLSAV------LIDATMAGLATCTLTHITELHASRDLVAALIGQPATPQAL 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Yang Y, Ma Y
T, Wang J, W
                                                                                                                                                     VR----VGLAPEMEEPPP-----ATPRRPI 319
                                                                                                                                                                                                      TGLKTGGDLTAÁVTKTVGTALSSSGMTSIÁTNSVPPVSSAAPKPTSWAÁIARKÞÁKÞQPK 251
                                                                                                   LKPKGNVGIGGSAVPPPPIKHNMNIGTWDEKGSVVKAPPTQPV 294
                                                                                                                                                                                                                                                                                                       SSAYSSSYGYPPSSL-----GR----AITDGQAGFGNDTLSKVPGISSIEQGM 191
                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
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Ma Y, Yamazaki V, Chen R, Wang Z, Ghosh M;
, Wang D, Drmanac RT;
                                                                                                                                                                                                                                                                                                                                                                                                   5.6%; Score 97; DB 5; Length 585; 25.2%; Pred. No. 1.4; ative 24; Mismatches 52; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        English
                                                                                                                                                                                                                                                                                                                                                                                                        46;
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Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                     Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
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Perfect score:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OM protein -
                                                                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein search, using sw model
                                                                                                                                                                     length: 0
length: 2000000000
 PIR_80:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
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1718
                                                                                                                                                                                                                                                           283416 seqs, 96216763 residues
                                                                                                                                                                                                                                                                                                                                                                                                                 March 23, 2006, 05:11:18; Search time 13.1689 Seconds (without alignments) 2418.401 Million cell updates/sec
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                                                                                                                                                                                                                                                                                                                                                 MPDTMVTTDVIKSAVQLACR.....PATPRRPIDEVFHVRAKDHR 331
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pir1: *
pir3: *
pir4: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GenCore version 5.1.7
(c) 1993 - 2006 Biocceleration
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

|        | 28 91  |        | 26                 |                    |                    | 9                 |                    | 21                 | 20                 | 19 95  | 18 95  | 17                 | 16 96  |                    | 14 99              |                    |                    | _      | _                  | 9 109  | 8 1                | 7      | 6                  | σ,     |        |        |        | 1             | Result<br>No. Score |
|--------|--------|--------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------|--------|--------------------|--------|--------------------|--------------------|--------------------|--------------------|--------|--------------------|--------|--------------------|--------|--------------------|--------|--------|--------|--------|---------------|---------------------|
| 91     | .5     | .5     | 92                 | .5                 |                    | ۵.<br>5           |                    | 94                 | 94                 | 5      | •      | 96                 | •      | 98                 | 99                 | .5                 | 5                  | 801    | 60                 | .5     | [2]                | 143    | 171                | 252    | 295    | 417    |        | .718 1        | :                   |
| ა<br>ა | 5.3    | 5.3    | 5.4                | 5.4                | 5.4                | 5.4               | 5.4                | s.<br>s            | 5.5                | 5.6    | 5.6    | 5.6                | 5.6    |                    |                    | 6.0                |                    | 6.3    |                    | 6.4    | 7.0                | 8.3    | 10.0               | 14.7   | 17.2   | 24.3   | 53.1   | 100.0         | Query<br>Match L    |
| 516    | 750    | 559    | 1186               | 1131               | 547                | 765               | 201                | 1111               | 602                | 481    | 481    | 2082               | 481    | 373                | 434                | 395                | 382                | 721    | 409                | 213    | 372                | 715    | 309                | 335    | 330    | 332    | 344    | 331           | Length              |
| _      | N      | N      | N                  | N                  | N                  | N                 | N                  | N                  | N                  | N      | N      | N                  | N      | N                  | N                  | N                  | N                  | N      | N                  | N      | N                  | N      | N                  | N      | N      | N      | N      | N             | B                   |
| S72937 | H70711 | E84213 | T19334             | T15617             | G71307             | H84247            | E95072             | T38407             | T50974             | E85795 | A98947 | T37056             | C64945 | T34743             | ¥75425             | T34908             | AG3161             | A87128 | C87319             | A84250 | B70661             | B70741 | T37033             | T37044 | T36944 | D70645 | F70922 | 0             | ID                  |
| ical I | ш      | ical   | hypothetical prote | hypothetical prote | probable oligopept | adaptive-response | nitroreductase fam | leucyl-trna synthe | related to hxB pro | w      |        | probable multi-dom | rRNA   | hypothetical prote | tRNA nucleotidyltr | redV protein - Str | conserved hypothet |        | hypothetical prote |        | hypothetical prote |        | hypothetical prote |        | •      | _      | _      | thetical prot | Description         |

| 44                                       | 43               | 40<br>41                                 | 39                 | 3 3<br>3 8                               | ა ი<br>ა           | 34                 | 33                 | 32                 | 31                | 30                 |
|--|------------------|--|--------------------|--|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|
| 88.5                                     | 89               | 89.5<br>89                               | 89.5               | 89.5                                     | 89.5               | 90.5               | 90.5               | 90.5               | 91                | 91                 |
| 51 51<br>10 10                           |                  | 5.2                                      | 5.2                | 5 5                                      | ษ                  | ω                  | ა<br>ა             | ა                  | ს                 | 5.3                |
| 1059                                     | 448<br>1143      | 1802<br>283                              | 1767               | 1173<br>1615                             | 201                | 457                | 421                | 383                | 635               | 517                |
| NN                                       | NN               | NN                                       | N                  | NN                                       | N                  | ง                  | N                  | N                  | N                 | N                  |
| T21891                                   | G70977<br>A69465 | H88444<br>C84321                         | A49502             | T25539<br>B49502                         | B97940             | G87003             | T35205             | A95871             | F70874            | G87032             |
| mypi procein - smu<br>hypothetical prote |                  | protein C26E6.12  <br>hypothetical prote | protein-tyrosine-p | hypothetical prote<br>protein-tyrosine-p | nitroreductase (EC | probable oxidoredu | citrate synthase-1 | probable glycosylt | probable membrane | conserved hypothet |

#### ALIGNMENTS

A;Molecule type: DNA
A;Residues: 1-331 <COL>
A;Cross-references: UNIPROT:053476; UNIPARC:UPI00001652C1; GB:AL021899; GB:AL123456; NID
A;Experimental source: strain H37Rv
C;Genetics: hypothetical protein Rv2032 - Mycobacterium tuberculosis (strain H37RV)
C;Species: Mycobacterium tuberculosis
C;ate: 17-Jul-1998 #sequence\_revision 17-Jul-1998 #text\_change 09-Jul-2004
C;Accession: G70942
C;Accession: G70942
R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, S.; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, S.; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Skelton, S.; Squares, S.
Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S.
Nature 393, 537-544, 1998
Nature 393, 537-544, 1998
A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G.
A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G.
A;Artecession: G70942
A;Accession: G70942
A;Accession: G70942
A;Accession: JNA
A.Molecule troe. JNA
A.Molecule troe. JNA 8 Ś 밁 Ś 밁 S 닭 á 밁 문 δ ;Gene: Rv2032 ;Superfamily: Mycobacterium hypothetical protein Rv3131 Best Local Sim Matches 331; Query Match 301 241 241 181 181 121 121 301 61 LGCGAVLDHFRVAMAAAGTTANVERFPNPNDPLHLASIDFSPADFVTEGHRLRADAILLR 120 61 LGCGAVLDHFRVAMAAAGTTANVERFPNPNDPLHLASIDFSPADFVTEGHRLRADAILLR 120 h 100.0%; Score 1718; DB 2; Length 331; Similarity 100.0%; Pred. No. 4.4e-142; 31; Conservative 0; Mismatches 0; Indels 0 VGLAPEMEEPPPATPRRPIDEVFHVRAKDHR 331 YDNERASLIRCGEMISAVLIDATMAGIATCTITHITELHASRDIVAALIGQPATPQALVR 300 AELFWWTGAFETSEGIPHSSLVSAAESDRVTFGRDFPVVANTDRRPEFGHDRSKVLVLST 240 RTDRLPFAEPPDWDLVESQLRTTVTADTVRIDVIADDMRPELAAASKLTESLRLYDSSYH RTDRLPFAEPPDWDLVESQLRTTVTADTVRIDVIADDMRPELAAASKLTESLRLYDSSYH 180 AELFWWTGAFETSEGIPHSSLVSAAESDRVTFGRDFPVVANTDRRPEFGHDRSKVLVLST 0, Gaps 240 180

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RESULT 3

Protein Rv3131 - Mycobacterium tuberculosis (strain H37RV)

C;Species: Mycobacterium tuberculosis
C;Species: Mycobacterium tuberculosis
C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 09-Jul-2004
C;Accession: D70645
R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Go
R;Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holr
Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S.
Nature 393, 537-544, 1998
A;Juthors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G.
A;Jitle: Deciphering the biology of Mycobacterium tuberculosis from the complete
A;Reference number: A70500; MUID:98295987; PMID:9634230
A;Accession: D70645
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                              A;Status: preliminary; nucleic acid sequence A;Molecule type: DNA A;Residues; 1-332 <COL>
A;Cross-references: UNIPROT:P95195; UNIPARC:UA;Experimental source: strain H37Rv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;(Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gord, Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroy, Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, 537-544, 1998

N;A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G. A;Aritle: Deciphering the biology of Mycobacterium tuberculosis from the complete ge A;Reference number: A70500; MUID:98295987; PMID:9634230

A;Accession: F70922

A;Status: preliminary; nucleic acid sequence not shown; translation not shown A;Molecule type: DNA
A;Residues: 1-344 <COL>
A;Cross-references: UNIPROT:005800; UNIPARC:UPI000016533C; GB:Z95150; GB:AL123456; A;Experimental source: strain H37Rv
C;Generics:
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             Genetics:
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10 VIKSAVQLACRAPSLHNSQPWRWIAE---DH-TVALFLDKDRVLYATDHSGREALLGCGA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            h 53.1%; Score 912; DB 2; Similarity 56.4%; Pred. No. 8.9e-72;
                                                                                                                                                                                                                                                                                                                                                                                                                                       EMEEPPPATPRRPIDEVFHVR 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADALRÓGEVLSTILLECTMÁGMÁTÓTLTHLIESSDSRDIVRGLTRÓRGEPÓALIRVGIAP 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WTSPFVLAHGVPPDTLASDAERLRVDLGRDFPVRSYQNRRAELADDRSKVLVLSTPSDTR
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                                                                                                                                                                                                                                                                                                                                                                                                                    PLAAVPAPTPRRPLDSVLQIR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PFAEPPDWDLVESQLRTTVTADTVRIDVIADDMRPELAAASKLTESLRLYDSSYHAELFW 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VLDHFRVAMAAAGTTANVERFPNPNDPLHLASIDFSPADFVTEGHRLRADAILLRRTDRL 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PFDSPMYWHLFEPALRDAVDKDVAMLDVVSDDQRTRLVVASQLSEVLRRDDPYYHAELEW
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                                                   UNIPARC: UPI000016533D;
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                                                                                                       not shown; translation
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                                                   GB:Z83867;
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                                                   GB:AL123456;
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C; Accession: T36944
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                                                                                                                                                                                                                                                                                                                                                                 Matches
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Best Local
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A;Gene: SCOEDB:SCJ1.11
C;Superfamily: Mycobac
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A;Cross-references: UNIPROT:Q9RJ03;
A;Experimental source: strain A3(2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Reference number: Z21607
A; Accession: T36944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R;Seeger, K.J.; Harris, D.; Thomson, N.R.; Parkhill, submitted to the EMBL Data Library, September 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Status: preliminary; translated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hypothetical protein SCJ1.11 - Streptomyces coelicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Species: Streptomyces coelicolor;Date: 03-Dec-1999 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity 36.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11 IKSAVQLACRAPSLHNSQPW--RWIAEDHTVALFLDKDRVLYATDHSGREALLGCGAVLD
                                                      HDRSK---
                                                                                                                                                       LYDSSYHAELFWWT---GAFETS-EGIPHSSLVSAAESDRVTFGRDFPVVANTDRRPEFG
                                                                                                                                                                                                                                                                                                                                                                            HERVAMAAAGTTANVEREPNENDPLHLASI----DESPADEVTEGHRLRADAILLRRTDRL
                                                                                                                                                                                                                                                                                                                                                                                                                                        VTTLVAEATTAPSMHNAOPWRFRFLAAERLVLLRADPARAMPRSDPGNRALHIGCGAALF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QPATPQALVRVGLAPEMEEPPPATPRRPIDEV 322
PDRGSAAFERTPHLALLGTRGDGPRDWLAAGQALERVLLEGTLRGLSTSLTSHPLE---D
                                                                                                      LVRAEEDEDLVRWTRLGGEVDTAVDGVP-AYAFGPRKSDGKAPVRDF-----SGRRPV--
                                                                                                                                                                                                                  PFSER----DIPEN-VRATLQAAAAREGATLLFPGLWHVDTLLELVRD----
                                                                                                                                                                                                                                                                   PFAEPPDWDLVESQLRTTVTADTVR------IDVIADDMRPELAAASKLTESLR 173
                                                                                                                                                                                                                                                                                                                               NLRVAAVHASLVPRIRLLPDPRDPLLLASVQLADLSEAPQEKDLWRLH-PAIRQRRTSRH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGYPQMLLRVGWAPINADPLPPTPRRELSQV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGAVLDHFRVAMAAAGTTANVERFPNPNDPLHLASIDFSP-----ADFVTEGHRLRADA 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PD----AETVRTVLTLAVRAPSIHNTQPWRWRVCPTSLELFSRPDMQLRSTDPDGRELIL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mycobacterium hypothetical protein Rv3131
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                                                   ----VLVLSTYDNERASLLRCGEMLSAVLLDATMAGLATCTLTHITELHAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               49; Mismatches 129; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 295; DB 2;
Pred. No. 5.4e-18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 417; DB 2;
Pred. No. 1.2e-28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from GB/EMBL/DDBJ
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                                                                                                                                                                                                                  ---AESRD
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R;Murphy, L; Harris, D.; Thomson, N.R.; Parkhill, J.; Bar submitted to the EMBL Data Library, August 1999
A;Reference number: Z21619
A;Accession: T37033
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-309 cMGR>
A;Cross-references: UNIPROT:Q9RI44; UNIPARC:UPI0000DB3E8;
A;Experimental source: strain A3(2)
C;Genetics:
A;Gene: SCOEDB:SCJ12.14
C;Superfamily: Mycobacterium hypothetical protein Rv3131
                                                                                                                                                                                                                                                                         RESULT 6
T37033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 5
T37044
C;Accession: T3704
R;Murphy, L.; Harris, D.; Thomson, N.R.; Parkhill, J.; Barrell, B.G.; Rajandream, Bubmitted to the EMBL Data Library, August 1999
A;Accession: T37044
R;Murphy, L.; Harris, D.; Thomson, N.R.; Parkhill, J.; Barrell, B.G.; Rajandream, Bubmitted to the EMBL Data Library, August 1999
A;Accession: T37044
                                                                                                                                                                                      hypothetical protein SCJ12.14 - Streptomyces coelicolor C;Specias: Streptomyces coelicolor C;Specias: Streptomyces coelicolor C;Date: 03.Dec-1999 #sequence_revision 03-Dec-1999 #tex C;Accession: T37033 R;Murphy, L.; Harris, D.; Thomson, N.R.; Parkhill, J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-335 <MUN>
A;Cross-references: UNIPROT:Q9RI33; UNIPARC:UPI0000DB3F3; EMBL:AL109989; PIDN:CAB53439.
A;Experimental source: strain A3(2)
C;Genetics:
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Best Local :
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Similarity 29.6%; Pred. No. 3.1e-1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NRTSSGRITETRHWLTAPGTVSPYGIPLTALGPQDLSGRIPM-RDFSGPLPVPHPPARRF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LRRTDRLPFAEPPDWDLVESQLRTTVTADTVRIDVIADDMRPELAAASKLTESLRLYDSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAVLDHFRVAMAAAGTTANVERFPNPNDPLHLASI-----DFSPADFVTEGHRLRADAIL 118
                                                                                                                                                                                                                                                                                                                                               RLPQQRCNPQILIRFGYGPEGGQAPRARVPEPDRP
                                                                                                                                                                                                                                                                                                                                                                         ALIGOPATPOALVRVGLAPEMEEPPPA---TPRRP
                                                                                                                                                                                                                                                                                                                                                                                                              E---RHAQVALLWTAHDRPQDWLRAGQALERVLLTATARGVRTSMLHQAMEWPDLR-AAA
                                                                                                                                                                                                                                                                                                                                                                                                                                               EFGHDRSKVLVLSTYDNERASLLRCGEMLSAVLLDATMAGLATCTLTH1TELHASRDLVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YHAE-----LFWWTGAFETSE-GIPHSSLVSAAESDRVTFGRDF----PVVANTDRRP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAVLNLRVAAAHMGWEPVVRLLPDPHDADLLAEVRPTGSGGNPPDY-----RWLYPSVE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RDLVAALIGQPAT----PQALVRVGLAPEMEEPPPATPRRPIDEVFHV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   44; Mismatches 154;
                                                                         UNIPARC:UPI00000DB3E8; EMBL:AL109989; PIDN:CAB53426
                                                                                                                                                                                                                       03-Dec-1999 #text_change 09-Jul-2004
      protein Rv3131
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Nature 393, 537-544,
                                                                                                                                                                                                                                                                                                          Best Local
Matches 9
                                                                                                                                                                                                                                                                                                                                             Query Match
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87; Conserv
                                                                                                                                                                                                                                                                                                              94;
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Query Match
Best Local
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QAMEWPDLRRALDGLPVDGPRGHTQMVLRLGYGPR----GPASPRRPVEET----TADHK
                                                                                                                                                                                                                                                                                                                                                                                          VWRRHSSRSPLSGRPLPSDLLTELIEAAHLGGATMRFSGRHDTERELCATWEVEWRNRAD 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                      QLRTTVTADTVRIDVIADDMRPELAAASKLTESLRLYDSSYHAE----LFW---W-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REPVTRPLPCPDRPALLATV-------RL-AESV-----RDAPETGLYET 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTANVERFPNPNDPLHLASIDFSPADFVTEGHRLRADAILLRRTDRLFFAEPPDWDLVES 138
                                                                                                                                                                                                                                                                TDRSAQSRRLVSGPHSPSLGLPSAALGPQDALDPLPIRNLGAHRHPEVLPARAFEPRPLL 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APSIRTTOPWRFRLDTDSRTVHIHAAADRARRHTDQVGRASHLSEGCAVLNLRVVAVHFG 62
                                                            ASR---DIVAALIGQPAT-----PQALVRVGLAPEMEEPPPATPRRPIDEVFHVRAKDHR 331
                                                                                                                                                                                             ANTDRRPEFGHDRSKVLVLSTYDNERASLLRCGEMLSAVLLDATMAGLATCTLTHITELH 279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                   -LPSAAHDR----
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                                                                                                                                -RTDWPRAGQALDRVLL-----LATRRAVRASLLH
                                                                                                                                                                                                                                                                                                                                --VSAAESDRVTFGRDF---PVV 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 309;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                             186
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A;Residues: 1-715 <COL>
A;Cross-references: UNIPROT:Q11025; UNIPARC:UPI000013A862;
A;Experimental source: strain H37Rv
C;Genetics: A;Authors: Sgares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G. A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete A;Reference number: A70500; MUID:98295987; PMID:9634230
A;Accession: B70741 A;Status: preliminary; nucleic acid sequence not shown; translation not shown R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Hc Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. probable moeY protein - Mycobacterium tuberculosis (strain H37RV) C;Species: Mycobacterium tuberculosis C;Decies: Mycobacterium tuberculosis C;Date: 17-Jul-1998 #sequence\_revision 17-Jul-1998 #text\_change (C;Accession: B70741 536 LHEEMMSELRWPGDPSLDAGIDVRSLELDSGELRVLDILRRSDVVARLAQWDCGTALEDN 425 MFNARVAAAAHRVLGSVEFDESQPDSPLQ-ATMHFGRGDDPSLAALYR--PMLLRTTNRH 369 TSEIV---AQAAIRAPSGGNVQPWHVVAKQHSLTIRLAPEHT-SAMDIAFRGSAVAVGAA 424 LDHFRVAMAAAGTTANVE-RFPNPNDPLHLASIDFSPADFVTEGHRLRADAILLRRTDR- 124 TDRRPEFGHDRSKVLVLSTYDNER-ASLLRCGEMLSAVLLDATMAGLATCTLTHI-----HGMPGHVHPATVEL----LTNTAAAEGARLQLLLS--RNEIDRAATILAAADRIRYLTPR 535 --LP-FAEPPDWDLVESQLRTTVTADTVRIDVIADDMRPELAAASKL---TESLRLYDSS 178 TTDVIKSAVQLACRAPSLHNSQPWRWIAEDHTVALFLDKDRVLYATDHSGREALLGCGAV YHAEL---FWWTGAFETSEGIPHSSL-VSAAESDRVTFGRDFPVVA---8.3%; Score 143; DB 2; ilarity 25.2%; Pred. No. 0.00028; Conservative 49; Mismatches 156 17-Jul-1998 #text\_change 09-Jul-2004 ----Length 715 Indels GB: 275555; GB: AL123456; NID: 74; ----N Gaps 595 275 221 481 Holroyd, genome

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RESULT 9
A84250
NADH oxidase [imported] - Halobacterium sp. NRC-1
C;Species: Halobacterium sp. NRC-1
C;Date: 02-Feb-2001 #sequence_revision 02-Feb-2001 #text_change 09-Jul-2004
C:Accession: A84250
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A;Accession: B70661
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                hypothetical protein Rv2337c - Mycobacterium tuberculosis (strain H37RV)
C;Species: Mycobacterium tuberculosis
C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 09-Jul-2004
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: DNA
A; Residues: 1-372 < COL>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;Gene: Rv2337c
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   172 LVRLAETERFRSRELHEELFSAVRFDIGWTAS--SDDGLPPGSLEVEAW------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           116 PIEGAIERRRTNRRVRFRGPP---LSQGEL-GALSAEATGIDGIQLHWFDSPETRKQILR 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       596
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           h 7.0%; Score 121; DB 2; Length 372;
Similarity 23.9%; Pred. No. 0.0095;
                                                                                                                                                                                                                                                                                                  DEVFHVRA 327
                                                                                                                                                                                                                                                                                                                                                GALTTSLDLASGALTAGAVFERIWLRTTLLGAELQPFAASAVLSLPACEWVAP-----
                                                                                                                                                                                                                                                                                                                                                                                             TELHASRDLVA-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VVANTDRRPEF-GHDRSKVLVLSTYDNERASLLRCGEMLSAVLLDATMAGLATCTLT-HI 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ----AILLRRTD-RLPFAEPPDWDLVESQLRTTVTADTVRIDVI------ADDMRPBLAA 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RIMSLVAIGAAVENVKLRAGRLGFETKVCWFPDSGNPGLVAEID-----VDRLPQTRVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GREALLGCGAVLDHFRVAMAAAGTTANVERFPNPNDPLHLASIDFSPADFVTEGHRLRAD 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SAVQLACRAPSLHN---
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ASKLTESLRLYDSSYHAELF-----WWTGAFETSEGIPHSSLVSAAESDRVTFGRDFP
                                                                                                                                                                                                                                                     ----HVRA 316
                                                                                                                                                                                                                                                                                                                                                                                                                                          ----MRPMFRGLRHWRVL----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SLVEAAALAPSADNRREVQLEHAGRRVRLWGDQTWR------SAPEHR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       --RVRHAIPEPHR 715
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      35; Mismatches 121; Indels
                                                                                                                                                                                                                                                                                                                                                                                           ----ALIGQPATPQALVRVGLAPEMEEPPPATPRRPI 319
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----SQPWRWIAEDHTVALFLDKDRVLYATDHS 55
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A;Molecule type: DNA
A;Residues: 1-409 <STO>
A;Cross-references: UNIPROT:Q9AAN2; UNIPARC:UPI00000C70B6; GB:AE005673; NID:g13421759;
                                                                                                                                                                                                                                                                                                                    R;Nierman, W.C.; Feldblyum, T.V.; Paulsen, I.T.; Nelson, K.E.; Eisen, J.; Heidelberg, J.I. B.; Laub, M.T.; DeBoy, R.T.; Dodson, R.J.; Durkin, A.S.; Gwinn, M.L.; Haft, D.H.; Kolone n, J.; Ermolaeva, M.; White, O.; Salzberg, S.L.; Shapiro, L.; Venter, J.C.; Fraser, C.M. Proc. Natl. Acad. Sci. U.S.A. 98, 4136-4141, 2001
A;Title: Complete Genome Sequence of Caulobacter crescentus.
A;Reference number: A87249; MUID:21173698; PMID:11259647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 10
C87319
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C;Accession: C87319
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                                                                                                                                                                          A;Gene: CC0565
                                                                                                                                                                                                                                                                                                      A; Accession: C87319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              hypothetical protein CC0565 [imported] - Caulobacter crescentus C;Species: Caulobacter crescentus
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C;Superfamily: nitroreductase
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-213 <STO>
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Proc. Natl. Acad. Sci. U.S.A. 97, 12176-12181, 2000
A;Authors: Hou, S.; Daniels, C.J.; Dennis, P.P.; Omer, A.D.; Ebhardt, H.; Lowe, T.M.; Lit A;Title: Genome sequence of Halobacterium species NRC-1.
A;Reference number: A84160; MVID:20504483; PMID:11016950
                                                                                                                                                                                                                                                                                A; Status: preliminary
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Similarity 20.1%;
                                                                                                         Similarity
                                        LACRAPSLHNSQPWRWIAEDHTVALFLDKDRVLYAT----DHSGREALLGCG----AVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LVLSTYDNERASLLRCGEMLSAVLLDATMAGLATCTLTHITELHASRDLVAALIGQPATP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DSSYHAELFWWTGAFETSEGIPHSSLVSAAESDRVTFGRDFPVVANTDRRPEFGHDRSKV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ----IVDAG-----TAILVAGHT------DP-----KTADRVFB-----
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  LSAYAPELKKGDDGR----
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                                                                                   Conservative
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                                                                                                     6.3%;
                                                                                     34,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 109.5; DB Pred. No. 0.044;
                                                                                                         Score 109; DB Pred. No. 0.12;
                                                                                     Mismatches 128;
  AHALSRSSVGYAATVRLLQTSGRGALVGRGPLPASAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   209
                                                                                                                         DB 2;
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                                                                                                                             Length 409;
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RESULT 11
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RESULT 12
AG3161
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A;Authors: Rutter, S.; Seeger, K.; Simon, S.; Simmonds, M.;
A;Title: Massive gene decay in the leprosy bacillus.
A;Reference number: A86909; MUID:21128732; PMID:11234002
A;Accession: A87128
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A;Residues: 1-721 <STO>
A;Cross-references: UNIPROT:Q9CBP5; UNIPARC:UPI00000C6DE0; GB:AL450380; NID:g13093490;
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Cole, S.T.; Eiglmeier, K.; Parkhill, R.; Davies, R.M.; Devlin, K.; Duthoy, eam, M.A.; Rutherford, K.M.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10 VIKSAVQLACRAPSLHNSQPWR-----WIAEDHTVALFLDKDRVLYATDHSGREA 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 89
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                                                                                                                            LADYARGGSAVEAIWVAAQRYGFAVQPISPVFLYAHSVDELHALSAQFADELGQ 676
                                                                                                                                                                                                                                                                                                                                                                                                                                            DLVESQLRTTVTA--DTVRIDVIADDMR-PELAAASKL--TESLRLYDSSYHAELFWWTG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GARTAVALLDLIHAED-----TPVVFDATLHGFA-
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                                                                                                                                                                                       RASLLRCGEMLSAVLIDATMAGLATCTLT-----HITELHASRDLVAALIGQ 291
                                                                                                                                                                                                                                                                                                                AFETSEGIPHSSLVSAAESDRVTFGRDFPVVANTDRRPEFGHDR----SKVLVLSTYDNE
                                                                                                                                                                                                                                                                                                                                                                              EEMISELRWPGDSFPDT-GIDVRSLEMDWHQLAAFDVLRRTDVMELLAQ-----WNVG
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                                                                                                                                                                                                                                                     ----ALGQD---
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S.; F
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                                                                                                                                                                                                                                                  -----THDRVVASSALAVISVPGHA
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Fraser, 1
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Holroyd,
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A;Status: preliminary; translated from A;Molecule type: DNA A;Residues: 1-395 «OLI» A;Cross-references: UNIPROT:054145; UN A;Experimental source: strain A3(2) C;Genetics: A;Gene: redV; SCOEDB:SC3F7.02c
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C;Species: Streptomyces coelicolor
C;Date: 05-Nov-1999 #sequence_revision 05-Nov-1999 #tex
C;Accession: T34908
R;Oliver, K.; Harris, D.; Parkhill, J.; Barrell, B.G.;
submitted to the EMBL Data Library, January 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 13
T34908
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A;Molecule type: DNA
A;Residues: 1-382 «KDA
A;Cross-references: UNIPROT:Q8UKT3; UNIPARC:UPI00000D1489;
A;Experimental source: strain C58 (Dupont)
C;Genetics:
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                                                                                                                                                                                                                                                          A; Reference number: Z21558
A; Accession: T34908
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HFTEACASLWVDGEL------VHLEDLVLHDATRDIRTPTHELTIARDVLRTRRRIA 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ITELHASRDLVAALIGQPA----TPQALVRVGLAPEMEE 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
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Pred. No. 0.27;
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                                                                                                                UNIPARC: UPI00000DAB97;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P.; Jung, M.;
                                                                                                                                                                                                                            GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                      05-Nov-1999 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----TVTADTVRIDVIADD------ 157
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HSSLVSAAESDRVTFG-RDFPVV 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels 117;
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                                                                                                                    EMBL:AL021409; PIDN:CAA16173
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McClell
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Query Match Best Local ( Matches 8)

96;

Conservative

43;

Mismatches 166;

Similarity

6.0%;

Score 102.5; Di Pred. No. 0.42;

DB 2;

Length Indels

395;

99;

Gaps

16;

| B 8   | D Q                                      | Q Q 00 | Query M<br>Best Lo<br>Matches   | A;Status: prel<br>A;Molecule typ<br>A;Residues: 1-<br>A;Cross-refere<br>A;Experimental<br>C;Genetics:<br>A;Gene: DR1191<br>A;Map position<br>C;Superfamily:   | M.; Sh<br>S.; Smit<br>Science<br>A;Title:<br>A;Refere  | RESULT 1<br>F75425<br>tRNA nuc<br>C;Specie<br>C;Date:<br>C;Access<br>R;White,                      | B Q  | 유 성  | B 8  | <u> </u>  | B &  | ₽ <b>Q</b>                                   | B 8  |
|---|--|--------|---|---|--|--|--|--|--|---|--|--|--|
| 250RCGEMLSAVLLDATMA-GLATCTLTHITELHASRDLVAALIGQPATPQ 296 ::   :    :   :   :     : | 218 VVANTDRRPEFGHDRSKVLVLSTYDNERASLL 249 |        | . Match 5.8%; Score 99; DB 2; Length 434; Local Similarity 22.5%; Pred. No. 0.97; Les 56; Conservative 32; Mismatches 77; Indels 84; Gaps 12; | A;Status: preliminary A;Molecule type: DNA A;Residues: 1-434 <whi> A;Residues: 1-434 <whi> A;Cross-references: UNIPROT:Q9RV39; UNIPARC:UPI0000D3DEE; GB:AE001968; GB:AE000513; NID A;Cross-references: UNIPROT:Q9RV39; UNIPARC:UPI0000D3DEE; GB:AE001968; GB:AE000513; NID A;Experimental source: strain R1 C;Genetics: C;Genetics: A;Gene: DR1191 A;Map position: 1 A;Map position: 1 C;Superfamily: tRNA nucleotidyltransferase (CCA-adding enzyme), bacterial type</whi></whi> | M.; Shen, M.; Vamathevan, J.J.; Lam, P.; McDonald, L.; Utterback, T.; Zalewski, C.; Ma S.; Smith, H.O.; Venter, J.C.; Fraser, C.M. Science 286, 1571-1577, 1999  A;Title: Genome sequence of the radioresistant bacterium Deinococcus radiodurans R1. A;Reference number: A75250; MUID:20036896; PMID:10567266 A;Accession: F75425 | protein - Deinococcus radiodurans<br>.ext_change 31-Dec-2004<br>5.K.; Peterson, J.D.; Dodson, R.J. | 292 PATPQALVRVGLAPEMEEPPPATPRRPIDEVFHV 325<br> | 243NERASLIRCGEMLSAVLLDATMAGLATCTLTHITELHASRDLVAALIGQ 291 | 203 SAAESDRVTFGRDFPVVANTDRRPEFGHDRSKVLVLSTYD 242 | 143 TVTADTVRIDVIADDMRPELAAASKLTESLRLYDSSYHAELFWWTGAFETSEGIPHSSLV 202<br>          : :       : | 93LHLASIDFSPADFVTEGHRLRADAILLRRTDRLPFAEPPDWDLVESQLRT 142 | 54 HSGREALLGCGAVLDHFRVAMAAAG-TTANVERFFNPNDDP | 11 IKSAVQLACRAPSLHNSQPWRWIAEDHTVALFLDKDRVLYATD 53<br>::: |

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RESULT 15
T34743
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T34743
Typothetical protein SC1E6.22c SC1E6.22c - Streptomyces coelicolor
C;Species: Streptomyces coelicolor
C;Date: 05-Nov-1999 #sequence_revision 05-Nov-1999 #text_change 09-Jul-2004
C;Ccession: T34743
R;Seegger,K.J.; Harris, D.; Parkhill, J.; Barrell, B.G.; Rajandream, M.A.
submitted to the EMBL Data Library, November 1998
A;Reference number: Z21555
A;Accession: T34743
A;Actatus: preliminary; translated from GB/EMBL/DDBJ
A;Actatus: preliminary; translated from GB/EMBL/DDBJ
A;Residues: 1-373 <SEE>
A;Gross-references: UNIPROT:Q9ZC00; UNIPARC:UPI0000DAE12; EMBL:AL033505; PIDN:CAA22050.1
A;Experimental source: strain A3(2)
C;Gene.SCEPB-SCIEE6 22c
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Best Local 9
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                                                                                             293
347
                                                  270
                                                                                                                                                                                             235 DEVEGLRUDHVRARAREDLDRFLAARSPDDEGRAGAAEGVP--ALVEAAREHRIDELLVI 292
                                                                                                                                                                                                                                             177
                                                                                                                                                                                                                                                                                          176 HNAAEIADALAVCQEETGADLLILVGDDRERRSVHERLFLRLQERVAEASRGAGS-RLLD
                                                                                                                                                                                                                                                                                                                                          146 -----ADTVRI------DVIADD------MRPELAAASKLTESLRLYD 176
                                                                                                                                                                                                                                                                                                                                                                                          122 VAYIDRKGADFELRSALGSSDAGGVTGROWPVHRT-----SSADWSERHFOLRVENTWE 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      386 VMALLGLTP 394
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      46 DRVLYATDHSGREALLGCG--AVLDHFRVAMAAAGTTANVERFPNPNDPLHLAS------
                                                                                                                                                                                                                                                                                                                                                                                                                                     98 ---IDFSPADFVTEGHRLRADA-----ILLRRTDRLPFAEPPDWDLVESQLRTTVT-- 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       63 DELRHATDPHGR-ALFACAGQVVLDPALARPPYGGTTADWAPLPHVTPLLDLAGEDPVCV 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                h 5.7%; Score 98; DB 2; Length 373;
Similarity 23.9%; Pred. No. 0.96;
79; Conservative 28; Mismatches 126; Indels 98;
ISVTPVLPPETSQKAPVGGLG-----ALLR 371
                                             CTLTHITELHASRDLVAALIGQPATPQALVR 300
                                                                                             PDAPDTHREVWIGEDADOVAV-----RRTELKTLGEONSWSARADDALLRSAVWTGAPA 346
                                                                                                                                        PVVANTDRRPEFGHDRSKVLVLSTYDNERASLLRCGEMLS-----AVLLDATMAGLAT 269
                                                                                                                                                                                                                                        SSYHA------BLFWWT-----GAFETSEGIPHSSLVSAAESDRVTFGRDF 216
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Search completed: March 23, 2006, 05:26:32 Job time : 15.1689 secs

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Title:
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Q7D270 MYCTU
Q7D2800 MYCTU
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Q7D280 MYCTA
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Q5YVPB NOCFA
Q5YVPB NOCFA
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Q73UJ3 MYCFA
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Q73UJ3 MYCFA
Q73UJ3 MYCFA
Q73UJ3 MYCFA
Q8TUA STRCO
Q4NVMO 9DELIT
Q9R133 STRCO
Q4NVMO 9DELIT
Q9R133 STRCO
Q4NVMO 9DELIT
Q9R134 STRCO
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NUCLEOTIDE SEQUENCE.

STRAIN-CDC 1551 / Oshkosh;

MEDLINE=22206494; PubMed=12218036;

MEDLINE=22206494; PubMed=12218036;

DOI=10.1128/JB.184.19.5479-5490.2002;

Pleischmann R.D., Alland D., Bisen J.A., Carpenter L., White O.,

Peterson J.D., DeBoy R.T., Dodson R.J., Gwinn M.L., Haft D.H.,

Hickey E.K., Kolonay J.F., Nelson W.C., Umayvam L.A., Ermolaeva M.D.,

Salzberg S.L., Delcher A., Utterback T.R., Weidman J.F., Khouri H.M.,

Gill J., Mikula A., Bishai W., Jacobs W.R. Jr., Venter J.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Jaboratory strains.",
J. Bacteriol. 184:5479-5490(2002).
EMBL; AE000516; AAK46370.1; -; Gen
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium;
Mycobacterium tuberculosis complex.
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RESULT

NUCLEOTIDE STRAIN=CDC

SEQUENCE. 1551 / Oshkosh;

NCBI\_TaxID=1773;

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629 MYCTU

707629 MYCTU PRELIMINARY;

Q70629;

Q70529;

05-UL-2004 (TrEMBLrel. 27, C)

05-UL-2004 (TrEMBLrel. 27, L)

05-UL-2004 (TrEMBLrel. 27, L)

05-UL-2004 (TrEMBLrel. 27, L)

OF JUL-2004 (TrEMBLrel. 27, L)

OrderedLocusNames=MT3212;
                                                               Mycobacterium tuberculosis.
Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium;
Mycobacterium tuberculosis complex.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Garnier T., Eiglmeier K., Camus J.-C., Medina N., Mansoor H.
Pryor M., Duthoy S., Grondin S., Lacroix C., Monsempe C., Si
Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheel
Parkhill J., Barrell B.G., Cole S.T., Gordon S.V., Hewinson
"The complete genome sequence of Mycobacterium bovis.";
Proc. Natl. Acad. Sci. U.S.A. 100:7877-7882 (2003).
EMBL; BX248341; CAD96911.1; -, Genomic DNA.
Complete proteome; Hypothetical protein.
SEQUENCE 331 AA; 36575 MW; 8FF2A825CE8BAAEB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN-AF2122/97;
STRAIN-AF2122/97;
MEDLINE=22709107; PubMed=12788972; DOI=10.1073/pnas.1130426100;
MEDLINE=22709107; PubMed=12788972; DOI=10.1073/pnas.1130426100;
Managor H.,
Sinor
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium;
Mycobacterium tuberculosis complex.
NCBI_TaxID=1765;
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01-OCT-2003 (TrEMBLrel. 25,
01-OCT-2003 (TrEMBLrel. 25,
Hypothetical protein Mb2058.
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Matches
MEDLINE=99295987; PubMed=9634230; DOI=10.1038/31159; Cole S.T., Brosch R., Parkhill J., Garnier T., Churcher C.M., Harris D.E., Gordon S.V., Eiglmeier K., Gas S., Barry C.E. III, Tekaia F., Badcock K., Basham D., Brown D., Chillingworth T., Tekaia F., Badcock K., Basham D., Brown D., Chillingworth T., Tekaia F., Badcock K., Bevlin K., Feltwell T., Gentles S., Hamlin Connor R., Davies R.M., Devlin K., Feltwell T., Gentles S., Hamlin Holroyd S., Hornsby T., Jagels K., Krogh A., McLean J., Moule S., Murphy L.D., Oliver S., Osborne J., Quail M.A., Rajandream M.A., Rogers J., Rutter S., Seeger K., Skelton S., Squares S., Squares R. Sulston J.E., Taylor K., Whitehead S., Barrell B.G.; "Deciphering the biology of Mycobacterium tuberculosis from the complete genome sequence.";
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DOI=10.1128/JB.184.19.5479-5490.2002;
Pleischmann R.D., Alland D., Elsen J.A., Carpenter L., White O.,
Peterson J.D., DeBoy R.T., Dodson R.J., Gwinn M.L., Haft D.H.,
Hickey E.K., Kolonay J.F., Nelson W.C., Umayam L.A., Ermolaeva M.D.,
Salzberg S.L., Delcher A., Utterback T.R., Weidman J.F., Khouri H.M.,
Gill J., Mikula A., Bishai W., Jacobs W.R. Jr., Venter J.C.,
                                                                                                                                                                                                                                                              Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales; Corynebacterineae; Mycobacteriaceae; Mycobacterium;
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Fraser C.M.;
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Pred. No. 3.3e-67
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RESULT 6
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Sarnier T., Eiglmeier K., Camus J.-C., Medina N., Mansoor H.,
Garnier T., Eiglmeier K., Camus J.-C., Medina N., Mansoor H.,
Pryor M., Duthoy S., Grondin S., Lacroix C., Monsempe C., Simon
Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler
Parkhill J., Barrell B.G., Cole S.T., Gordon S.V., Hewinson R.G
"The complete genome sequence of Mycobacterium bovis.";
Proc. Natl. Acad. Sci. U.S.A. 100:7877-7882(2003).
EMBL, BX248345; CAD95242.1; -, Genomic_DNA.
Complete proteome; Hypothetical protein.
SEQUENCE 344 AA; 38476 MW; 9DADFB3495F24770 CRC64;
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Hypothetical protein Mb3150.
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EMBL; B8442582; CAB08361:1; -;

PIR; F70922; F70922.

TubercuList; Rv3127; -
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                                                    MLKNAVLLACRAPSVHNSQPWRWVAESGSEHTTVHLFVNRHRTVPATDHSGRQAIISCGA
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40; Mismatches
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Pred. No. 2.6e-66;
0; Mismatches 97;
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Best Local Sim.
Matches 170;
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Complete proteome.
SEQUENCE 333 AA; 36766 MW; 8F3BA4527D63
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OrderedLocusNames=MAP1743c;
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium;
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                                                                                                          .ATCPVTHVTELEAGRDLIQHLMADPAAVPQVLIRVGVEPE
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                       NUCLEOTIDE SEQUENCE.
STRALN=IFM 10152;
PubMed=15466710; DOI=10.1073/pnas.0406410101;
Ishikawa J., Yamashita A., Mikami Y., Hoshino Y.,
Shiba T., Hattori M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "The complete genomic sequence of Nocardia farcinica IFM Proc. Natl. Acad. Sci. U.S.A. 101:14925-14930 (2004). EMBL; AP006618; BABD57614.1; -; Genomic DNA. Complete proteome; Hypothetical protein. SEQUENCE 333 AA; 36173 MW; 6EEFFA9E47BD5A81 CRC64;
                                                                                                                                                                        Corynebacterineae; Nocardiaceae; Nocardia
NCBI_TaxID=37329;
                                                                                                                                                                                                                              Bacteria; Actinobacteria; Actinobacteridae;
                                                                                                                                                                                                                                                                               Hypothetical protein.
OrderedLocusNames=nfa28960;
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PubMed=15466712;
PubMed=15466712;
Ishikawa J., Yamashita A., Mikami Y., Hoshino Y.,
Shiba T., Hattori M.;
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3; Mismatches 130;
       of.
       Nocardia
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Q73UU3;
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium;
Mycobacterium avium complex (MAC).
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SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN=k10;
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                            YSCWPVPVGDIALMAARAARAGVTLYQVQDVDGLHDIVAQSIRDHLT--
                                                                           FAEPP----DWDLVESQ-LRTTVTADTVR----IDVIADDMRPELAAASKLTESLRLYD
                                                                                                                                                                                   HERVAMAAAGTTANVEREENPNDPLHLASIDESP--ADEVTEGHRLRADAILLRRTDRLP
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Pred. No. 5.2e-31;
                                                                                                                                                                                                                                                                                                                                                                                Score 434.5; DB 2
Pred. No. 1.8e-27;
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                         (TrEMBLrel 03, 02 (TrEMBLrel 20, 13) (TrEMBLrel 24, 13)
                                                                                                                                      PRELIMINARY;
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Li L., Bannantine J., Zhang Q., Submitted (SEP-2003) to the EME EMBL; AE017233; AAS04063.1; -; Complete proteome. SEQUENCE 342 AA; 36982 MW:
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                                                                             VLLALGTRGDDRLARLRAGEATSMVLLTATSMGLASCPVTEPLEVADTREAVRAEIFGGS
                                                                                                 KVLVLSTYDNERASLLRCGEMLSAVLLDATMAGLATCTLTHITELHASRDLV-AALIGQP
                                                                                                                                                      NRDYLVELAAWSGRYAAVAGVPARNTPKSDPGAKIP-GRLFAGPMLA-MPSGSSAAEDNS
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                                                                                                                                                                                                                                 HYSSWPVPVGDIALMAARARNRVTLCQVE------DADKLHEIVKQSVWDHM
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RA Cole S.T., Brosch R., Parkhill J., Garnier T., Churcher C.M.,
RA Harris D.E., Gordon S.V., Eiglmeier K., Gas S., Barry C.E. III,
RA Tekaia F., Badcock K., Basham D., Brown D., Chillingworth T.,
RA Connor R., Davies R.M., Devlin K., Feltwell T., Gentles S.,
RA Holroyd S., Hornsby T., Jagels K., Krogh A., McLean J., Moule S.,
RA Murphy L.D., Oliver S., Osborne J., Quail M.A., Rajandream M.A.,
RA Rogers J., Rutter S., Seeger K., Skelton S., Squares S., Squares R.,
RA Sulston J.E., Taylor K., Whitehead S., Barrell B.G.;
T "Deciphering the biology of Mycobacterium tuberculosis from the
Complete genome sequence.";
L Nature 393:537-544(1998).
R EMBI. NRASCER.
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Q7TX70;
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                                                                                                                                                         Mycobacterium bovis.

Bacteria; Actinobacteria; Actinobacteridae;
Corynebacterineae; Mycobacteriaceae; Mycobac
Mycobacterium tuberculosis complex.
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01-OCT-2003 (TrEMBLrel. 25, Last seq
01-OCT-2003 (TrEMBLrel. 25, Last ann
Hypothetical protein Mb3155.
OrderedLocusNames=Mb3155;
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plr; D70645; D70645.
TubercuList; Rv3131; -.
Complete proteome; Hypothetical protein.
Complete proteome; Hypothetical protein.
SEQUENCE 332 AA; 35978 MW; 8C28FF93130D131A CRC64;
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                                               NUCLEOTIDE SEQUENCE
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Mycobacterium tuberculosis.
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Pred. No. 5.2e-26;
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05-JUL-2004 (TrEMBLrel. 27
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Hypothetical protein.
OrderedLocusNames=MT3217;
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27 MYCTU
Q7D627_1
                                                                                                           NUCLEOTIDE SEQUENCE.

NUCLEOTIDE SEQUENCE.

STRAIN=CDC 1551 / Oshkosh;

MEDLINB=2226444; PubMed=12218036;

MEDLINB=2226444; PubMed=12218036;

MEDLINB=2226444; PubMed=12218036;

DOI=10.1128/JB.184.19.5479-5490.2002;

Pleischmann R.D., Alland D., Bisen J.A., Carpenter L., White O., Pleischmann R.D., DeBoy R.T., Dodson R.J., Gwinn M.L., Haft D.H., Hickey E.K., Kolonay J.F., Nelson W.C., Unayam L.A., Ermolaeva M.D. Salzberg S.L., Delcher A., Utterback T.R., Weidman J.F., Khouri H.M Gill J., Mikula A., Bishai W., Jacobs W.R. Jr., Venter J.C., Fraser C.M.;
                                                J. Bacteriol. 184:5479-5490(2002).
EMBL; AE000516; AAK47555.1; -; Genomic_DNA
                                                                                                                                                                                                                                                                                                      Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales; Corynebacterineae; Mycobacteriaceae; Mycobacterium; Mycobacterium tuberculosis complex.
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EMBL; BX248345; CAD95247.1; -, Genomic DNA.
Complete proteome; Hypothetical protein.

SEQUENCE 332 AA; 35978 MW; 8C28FF93130D131A CRC64;
                                                                                                                                                                                                                                                                                      NCBI_TaxID=1773;
                                                                                                                                                                                                                                                                                                                                                        Mycobacterium tuberculosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q7D627;
                   Hypothetical
                                  TIGR;
                                                                                                "Whole-genome comparison
                                                                             laboratory strains.",
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Pred. No. 5.2e
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Last annotation update)
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Similarity

24.3%; Score 417; DB 2; 36.1%; Pred. No. 5.5e-26;

Length 344;

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                                                                                                                                                                                              W PubMed=1337794; DOI=10.1073/pnas.0403302101;

W Atkins T., Crossman L.C., Pitt T., Churcher C., Mungall K.L.,

W Atkins T., Crossman L.C., Pitt T., Churcher C., Mungall K.L.,

W Bentley S.D., Sebahihia M., Thomson N.R., Bason N., Beacham I.R.,

W Brooks K., Brown K.A., Brown N.F., Challis G.L., Cherevach I.,

Chillingworth T., Cronin A., Crossett B., Davis P., DeShazer D.,

W Chillingworth T., Fraser A., Hance Z., Hauser H., Holroyd S., Jagels K.,

W Keith K.E., Maddison M., Moule S., Price C., Quail M.A.,

W Keith K.E., Maddison M., Moule S., Price C., Quail M.A.,

W Keith K.E., Maddison M., Moule S., Price C., Ouail M.A.,

W Keith K.E., Maddison M., Moule S., Price C., Warnell B.G.,

W Keith K.E., Maddison M., Moule S., Price C., Parkhill J.;

W Keith K.E., Maddison M., Moule S., Price C., Parkhill J.;

W Songsivilai S., Stevens K., Tunapa S., Vesaratchavest M.,

W Mhitehead S., Yeats C., Barrell B.G., Oyston P.C.F., Parkhill J.;

W Genomic plasticity of the causative agent of melioidosis,

Burkholderia pseudomallei.";

Burkholderia pseudomallei.";

Burkholderia pseudomallei.";

Burkholderia pseudomallei.";

Burkholderia pseudomallei.";

Burkholderia pseudomallei.";

W Complete proteome; Hypothetical protein.

SQ SEQUENCE 343 AA; 37037 MW; D2391D16284362B4 CRC64;
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Q63HY5;
25-OCT-2004 (
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OrderedLocusNames=BPSS2284;
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Bacteria; Proteobacteria; Betaproteobacteria; Burkholderiales;
Burkholderiaceae; Burkholderia; pseudomallei group.
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HFRVAMAAAGTTANVERFPNPNDPLHLASIDFSPADFVTEGHRLRADAILLRRTDRLPFA 128
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                                                        DKLRLAIHYAILAPSSHNTQPWRFMVGDGSVMLCADRLRALSVVDPYDRELLISCGAALL
                                                                                          DVIKSAVQLACRAPSLHNSQPWRWIAEDHTVALFLDKDRVLYATDHSGREALLGCGAVLD 68
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Last annotation update)
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                                                                                                                               Score 334.5; DB 2;
Pred. No. 3.7e-19;
9; Mismatches 148;
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  -APRRPLMDV
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Search completed: March 23, 2006, 05:24:24 Job time : 86.6574 secs

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Minimum DB :
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Maximum Match 100%
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Perfect score:
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seq length: 2000000000
Issued Patents AA:*

1: /cgn2_6/ptcdatta/1/iaa/5_COMB.pep:*

2: /cgn2_6/ptcdatta/1/iaa/6_COMB.pep:*

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5: /cgn2_6/ptcdatta/1/iaa/RE_COMB.pep:*

6: /cgn2_6/ptcdata/1/iaa/Backfiles1.pep:*
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1212.194 Million cell updates/sec
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Copyright (c) 1993 - 2006 Biocceleration Ltd.
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

# SUMMARIES

| Result<br>No. | Score | Query<br>Match | Length | DΒ | ID                   | Description       |
|---------------|-------|----------------|--------|----|----------------------|-------------------|
| 1             | 529   | 30.8           | 104    | 2  | US-09-072-596-244    |                   |
| ν             | 529   | 30.8           | 104    | N  | -09-072-967-2        | Sequence 249, App |
| ω             | 529   | 30.8           | 104    | N  | -10-193              | 244,              |
| 4             | 529   | 30.8           | 104    | N  | -10-084-843          | 249,              |
| υ             | 106.5 |                | 413    | N  | -09-266-965-13       | 139,              |
| 6             | 100.5 | 5.8            | 1176   | N  | US-09-976-594-793    | 793,              |
| 7             | 96.5  |                | 415    | N  | US-09-758-759-23     | 23,               |
| 8             | 95    |                | 534    | N  |                      | 3403              |
| 9             | 92.5  |                | 519    | N  | 1                    |                   |
| 10            | 90.5  |                | 664    | N  | US-09-252-991A-16969 |                   |
| 11            | 90.5  |                | 1596   | N  | US-08-978-277A-4     | Sequence 4, Appli |
| 12            | 90    |                | 285    | N  | US-09-248-796A-20009 |                   |
| 13            | 89.5  |                | 371    | N  | US-09-902-540-15386  |                   |
| 14            | 10    |                | 502    | N  | US-09-489-039A-14063 | 1,                |
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| 16            | 89    |                | 1580   | _  | US-08-804-198-5      |                   |
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|               |       |                |        |    |                      |                   |

| 86.5 5.0 497 4 PCT-US94-06698-4 86.5 5.0 522 2 US-09-949-016-9741 86.5 5.0 522 2 US-09-949-016-9741 86.5 5.0 3546 2 US-09-679-279-13 86.5 5.0 484 2 US-09-679-279-13 85.5 5.0 646 2 US-09-328-352-6017 85.5 5.0 646 2 US-09-252-91A-30681 85.5 5.0 942 2 US-09-252-91A-30681 85.5 5.0 942 2 US-09-252-91A-30681 85.4 9 3782 2 US-09-042-665A-8 84.5 4.9 866 2 US-09-105-537-4 84.5 4.9 866 2 US-09-105-537-4 84.5 4.9 866 2 US-09-105-537-4 84.5 4.9 867 2 US-09-105-537-4 84.5 4.9 868 297 1 US-09-328-352-396 83 4.8 297 1 US-09-328-352-396 83 4.8 297 2 US-09-328-352-119 83 4.8 297 2 US-09-263-352-41 83 4.8 297 2 US-09-263-352-41 83 4.8 370 2 US-09-602-787A-182 82.5 4.8 370 2 US-08-582-776C-2 | 45               | 44               | 43                 | 42                | 41               | 40               | 3<br>9             | 38                   | 37              | 36               | 35                   | 34                 | u<br>u              | 32               | <u>ن</u><br>1      | 30                 | 29               |  |
|---|------------------|------------------|--------------------|-------------------|------------------|------------------|--------------------|----------------------|-----------------|------------------|----------------------|--------------------|---------------------|------------------|--------------------|--------------------|------------------|--|
| 546<br>552<br>552<br>546<br>648<br>648<br>648<br>648<br>648<br>648<br>648<br>6  | 82.5             | 82.5             | 83                 | 83                | 83               | 83               | 83.5               | 84.5                 | 85              | 85.5             | 85.5                 | 85.5               | 86                  | 86.5             | 86.5               | 86.5               | 86.5             |  |
| 4   | 4.8              | 4.8              | 4.8                | 4.8               | 4.8              | 4.8              | 4.9                | 4.9                  | 4.9             | 5.0              | 5.0                  | 5.0                | 5.0                 | 5.0              | 5.0                | 5.0                | 5.0              |  |
|   | 370              | 370              | 737                | 691               | 297              | 297              | 479                | 869                  | 3782            | 3413             | 942                  | 646                | 484                 | 3546             | 522                | 522                | 497              |  |
| PCT-US94-06698-4 US-09-949-016-9741 US-09-949-016-9741 US-09-679-279-13 US-09-679-279-13 US-09-65-7038-252-6017 US-09-328-352-6017 US-10-042-665A-8 US-09-105-537-4 US-09-128-352-5396 US-09-138-352-5396 US-09-253-352-5396 US-09-263-352-41 US-09-263-352-41 US-09-263-352-41 US-09-263-352-41 US-09-263-352-41 US-09-263-352-41 US-09-263-352-41 US-09-263-352-41 US-09-263-352-42 US-08-38-362-776C-2   | N                | N                | N                  | N                 | N                | ۲                | N                  | N                    | N               | N                | N                    | N                  | N                   | N                | N                  | N                  | 4.               |  |
|   | US-08-582-776C-2 | US-08-369-822C-2 | US-09-602-787A-182 | US-09-758-759-159 | US-09-263-352-41 | US-08-738-944-51 | US-09-328-352-5396 | US-09-489-039A-11429 | US-09-105-537-4 | US-10-042-665A-8 | US-09-252-991A-30681 | US-09-328-352-6017 | US-09-605-703B-2520 | US-09-679-279-13 | US-09-949-016-9741 | US-09-949-016-9740 | PCT-US94-06698-4 |  |
|   | Appli            | Appli            | 182, App           | 159, App          | 41, Appl         | Appl             | 5396, Ap           | 11429, A             | Appli           | 8, Appli         | 30681, A             | 6017, Ag           | 2520, Ap            | 13, Appl         | 9741, Ap           | 9740, Ap           | Appli            |  |

## ALIGNMENTS

RESULT 1 US-09-072-596-244

Sequence 244, Application US/09072596 Patent No. 6458366

GENERAL INFORMATION:

APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:

Skeiky, Yasir A.W. Dillon, Davin C. Campos-Neto, Antonia Reed, Steven G.

APPLICANT:

Houghton, Raymond
Vedvick, Thomas S.
Twardzik, Daniel R.
Lodes, Michael J.
Hendrickson, Ronald C.

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US-09-072-596-244
                                                                                                                                          TELEPHONE: (206) 622-4900
TELEPAX: (206) 682-6031
INFORMATION FOR SEQ ID NO: 24
SEQUENCE CHARACTERISTICS:
LENGTH: 104 amino acids
                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
NAME: Maki, David J.
REGISTRATION NUMBER: 31,392
REFERENCE/DOCKET NUMBER: 2101
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 622,4900
                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/072,596
FILING DATE: 05-MAY-1998
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ZIP: 98104-7094
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
ADDRESSEE: SEED and BERRY LLP
STREET: 6300 Columbia Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Twardzik, Daniel R.
APPLICANT: Lodes, Michael J.
APPLICANT: Hendrickson, Ronald C.
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR DIAGNOSIS
NUMBER OF SEQUENCES: 350
                                                                             MOLECULE TYPE:
                                                                                                           STRANDEDNESS:
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                                                                                             TOPOLOGY:
                                                                                                                                   TYPE: amino acid
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Score 529; DB 2;
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                                                                                                                                      Query Match 30.8%; Score 529; DB 2; I Best Local Similarity 100.0%; Pred. No. 8e-51; Matches 104; Conservative 0; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                        TELEFAX: (206) 682-6031
INFORMATION FOR SEQ ID NO: 249:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/072,967
FILING DATE: 05-MAY-1998
CLASSIFICATION:
ATTORNEY / ACTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STATE: "-STATE: USA COUNTRY: USA 7092 TTD: 98104-7092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
NAME: Maki, David J.
REGISTRATION NUMBER: 31,392
REFERENCE/DOCKET NUMBER: 21
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCE.
CORRESPONDENCE ADDRESS:
CORRESPONDENCE SEED and BERRY LLP
CORRESPONDENCE SEED and BERRY LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Twardzik, Daniel R.
APPLICANT: Lodes, Michael J.
APPLICANT: Hendrickson, Ronald C.
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR IMMUNOTHERAPY
TITLE OF INVENTION: AND DIAGNOSIS OF TUBERCULOSIS
NUMBER OF SEQUENCES: 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
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                                                                                                                                                                                                                                                                  LENGTH: 104 amino acids
TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                   TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE:
                                 134
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13
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5. 6592877
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DLVESQLRTTVTADTVRIDVIADDMRPELAAASKLTESLRLYDS 104
                      DLVESQLRTTVTADTVRIDVIADDMRPELAAASKLTESLRLYDS 177
                                                                       MAAAGTTANVERFPNPNDPLHLASIDFSPADFVTEGHRLRADAILLRRTDRLPFAEPPDW
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Vedvick, Thomas S.
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Dillon, Davin C.
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                                                                                                                                                                            DB 2; Length 104;
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RESULT 4
US-10-084-843-249
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Sequence 249, Application US/10084843
PATENT NO. 662710
GENERAL INFORMATION:
APPLICANT: Reed, Steven G.
Skeiky, Yasir A.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 244, Application US/10193002
PATENT NO. 6949246
GENERAL INFORMATION:
APPLICANT: Reed, Steven G.
                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1
CURRENT APPLICATION DATA:
APPLICATION UNMBER: US/10/193,002
FILING DATE: 10-Jul-2002
CLASSIFICATION: CURRONS
PRIOR APPLICATION: CURRONS
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US/09/072,596
FILING DATE: 05-MAY-1998
ATTORNEY/AGENT INFORMATION:
NAME: Maki, David J.
REGISTRATION NUMBER: 31,392
REFERENCE/DOCKET NUMBER: 210121.417C9
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MATION FOR SEQ ID NO: 244
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES: 350
CORRESPONDENCE ADDRESS:
CORRESPONDENCE ADDRESSES AND BERRY LLP
STREET: 6300 Columbia Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hendrickson, Ronald C.
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR DIAGNOSIS
                                                                                                                                                                                                         134 DLVESQLRTTVTADTVRIDVIADDMRPELAAASKLTESLRLYDS 177
                                                                                                                                                                                                                                                                                                                                               104;
                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                           74 MAAAGTTANVERFPNENDPLHLASIDFSPADFVTEGHRLRADAILLRRTDRLPFAEPPDW
                                                                                                                                                                                                                                                                   1 MAAAGTTANVERFPNPNDPLHLASIDFSPADFVTEGHRLRADAILLRRTDRLPFAEPPDW 60
                                                                                                                                                                                        DLVESQLRTTVTADTVRIDVIADDMRPELAAASKLTESLRLYDS 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: Seattle
STATE: Washington
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE: (206) 622-490
TELEFAX: (206) 682-6031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 104 amino acids
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Vedvick, Thomas S.
Twardzik, Daniel R.
Lodes, Michael J.
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Dillon, Davin C.
                                                                                                                                                                                                                                                                                                                                                                  30.8%; Score 529; DB 2; 100.0%; Pred. No. 8e-51;
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RESULT 5
US-09-266-965-139
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                                                                                                                                                                                         Sequence 139, Application US/09266965 Patent No. 6495348
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
APPLICANT: Sherman, D
APPLICANT: Wac, Y
APPLICANT: Waroglu, M
APPLICANT: He, M
APPLICANT: He, M
APPLICANT: Sheldon, P
TITLE OF INVENTION: Mitomycin biosynthetic gene cluster
FILE REFERENCE: 600.456US1
CURRENT APPLICATION NUMBER: US/09/266,965
CURRENT FILING DATE: 1999-03-12
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US/09/072,967
FILING DATE: 05-MAY-1998
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/10/084,843
PILING DATE: 25-Feb-2002
CLASSIPICATION: <Unknown>
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PETENTIN Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: linear MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REGISTRATION NUMBER: 31,392
REFERENCE/DOCKET NUMBER: 21
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE DESCRIPTION: SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                134 DLVESQLRTTVTADTVRIDVIADDMRPELAAASKLTESLRLYDS 177
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE: (206) 622-4900
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Hendrickson, Ronald C.
HENDRICK COMPOUNDS AND METHODS FOR IMMUNOTHERAPY
INVENTION: AND DIAGNOSIS OF TUBERCULOSIS
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100.0%; Pr
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; EARLIER APPLICATION NUMBER: US 08/624,447;
; EARLIER FILING DATE: 1996-08-19;
; EARLIER APPLICATION UNMBER: PCT/US94/11279;
EARLIER FILING DATE: 1994-10-06;
EARLIER FILING DATE: 1994-10-06;
EARLIER FILING DATE: 1993-10-07;
NUMBER OF SEQ ID NOS: 145;
SOFTWARE: FastSEQ for Windows Version 3.0;
SEQ ID NO 139;
LENGTH: 413;
TYPE: PRT
                  S
                                                                                                                      PEATURE:

NAME/KEY: misc feature
OTHER INFORMATION: Incyte ID No.
US-09-976-594-793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-976-594-793
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                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/09/976,594
CURRENT FILING DATE: 2001-10-12
PRIOR APPLICATION NUMBER: 60/240,409
PRIOR FILING DATE: 2000-10-12
NUMBER OF SEQ ID NOS: 1143
SOFTMARE: PERL Program
SEQ ID NO 793
SEQ ID NO 793
                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 793, Application US/09976594
Patent No. 6673549
GENERAL INFORMATION:
                                                     Matches
                                                                        Query Match
Best Local
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                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Furness, Michael
APPLICANT: Buchbinder, Jenny
TITLE OF INVENTION: GENES EXPRESSED IN C3A LIVER CELL CULTURES TREATED WITH STEROIDS
FILE REFERENCE: PA-0041 US
                                                                                                                                                                                     TYPE: PRT ORGANISM: Homo sapiens
                                                                                                                                                                                                                                LENGTH:
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86 FPNP--NDPLHLA-SIDFSPADFVTEGHRLRADAIL-----
                                              5.8%;
1 Similarity 22.0%;
57; Conservation
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AHKAGADFVVVDGSSYTREGHRAIPDE--FAATEK--FADVTRW--VRSVTGLPVWWAEW 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LHLASIDFSPAD---FVTEGHRLRADAILLRRTDRLPFABPPDWDLVESQLRTTVTADTV 149
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AFETSEG--IPHSSLVSAAESDRVTFGRDFP-----VVANTDRRPEFGHDRSKVLV
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                                                   38; Mismatches
                                                                    Score 100.5; D
Pred. No. 0.19;
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Pred. No. 0.0
                                                                                                                                            6673549 1806212CD
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                                                                                       DB 2;
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                                                                                       Length 1176;
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                      -LRRTDR 124
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; OTHER INFORMATION:
US-09-758-759-23
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PRIOR FILING DATE: 2000-01-12
NUMBER OF SEQ ID NOS: 204
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 74; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Hosted, Thomas J.
APPLICANT: Wang, Tim X.
APPLICANT: Horan, Ann C.
TITLE OF INVENTION: Everninomicin Biosynthetic
FILE REFERENCE: ID0983K US
CURRENT APPLICATION NUMBER: US/09/758,759
CURRENT FILICATION NUMBER: 2001-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: PRT ORGANISM: Micromonospora carbonacea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 415
                                                                                                                                                                                              179
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297
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                                      PATPQALVRVGLAPEMEEPPPATP 315
                                                                                                                                                                                            YHAELFWWTGAFETSEGIPHSSLVSAAESDRVTFGRDFPVVANTDRRPEFGHDRSKVLVL 238
                                                                                                                                                                                                                                   YGPGQRPTPGYGVLSHWLEATVRGEPIRLFGDPAVVRDYVHVDDVTAIMEVIAQRAGDGD 208
                                                                                                                                                                                                                                                                                                              -----YTPTVWPPYHERSAT-GPASAYGRA-KLRLEQELLRHTDRVQPVVTRLSNV 148
                                                                                                                                                                                                                                                                                                                                                    AAGTTANVERFPNPNDPLHLASIDFSPADFVTEGHRLRADAILLRRTDRL------
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PARPSA--RLGRASRGREPPQPRP 318
                                                                                                                                                        RDR----LPTVVNVGSGLP-TSLAELLQTMSTVAGRELEVI--RDVRRQFDHR-----
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                                                                                                                 STYDNERASLLRCGEMLSAVLLDATMAGLATCTLTHITELHASRDLVAALI-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5.6%; Score 96.5; DB 2;
22.8%; Pred. No. 0.095;
ative 29; Mismatches 140;
                                                                             GNWLDTTLARETLGWQARISLP----DGVRQCWEAVLTRAGGPGGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    140; Indels
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RESULT 8

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CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 30815
LENGTH: 519
TYPE: PRT
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; ORGANISM: Homo sapiens
US-10-104-047-3403
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CURRENT FILING DATE: 2002-03-25
PRIOR APPLICATION NUMBER:
PRIOR FILING DATE:
PRIOR FILING DATE:
NUMBER OF SEQ ID NOS: 4096
SOFTWARE: PATENTIN Ver. 2.1
SEQ ID NO 3403
LENGTH: 534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 30815, Application US/09252991A Patent No. 6551795
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Patent No. 6943241
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                                                                                                                                                                                                                                                                                                   Query Match
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: MAIC J. RUBENFIELD et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: ARROGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: HELIX RESEARCH INSTITUTE TITLE OF INVENTION: No. 6943241el full length FILE REFERENCE: H1-A0105
                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Pseudomonas aeruginosa
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                                                                                                                                                                                                                                                                                 Local Similarity
121 GTQQAERRTHHPEAGSAAGDALAGGSQAGLHQYPGEVRVQLDAFDLAD----
                                                                                                                           111 RL-RADAILLRRTDRLPFAEPPDWDL-----VESQLRTTVTADTVRIDVIADDMRPEL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   201 LKPKGNVGIGGSAVPPPPIKHNMNIGTWDEKGSVVKAPPTQPV 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              246 ASLLRCGEMLSAV-----LIDATMAGLATCTLTHITELHASRDLVAALIGQPATPQAL 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  187 TGAFETSEGIPHSSLVSAAESDRVTFGRDFPVVANTDRRPEFGHDR-SKVLVLSTYDNER 245
                                                                                                                                                                                                                57 REALLGCGAVLDHFRVAMAAAGTTAN-VERFPNPND--PLHL---ASIDFSPADFVTEGH 110
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                                                                                QVARLDRALARRTEGOPOAVFPTQQVGCFGESLEACLALARRARRORLDIGAADQGSEVL
                                                                                                                                                                        RQTLEQAGVDAEAAGIPETAAGTHQRYVARFDEDADQHPVGLFAQGQVDDLAHRDLPVGH
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                                        -----AAASKLTESLRLYDSSYHAELFWWTGAFETSEGIPHSSLVSAAE 206
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                                                                                                                                                                                                                                                           36; Mismatches 120;
                                                                                                                                                                                                                                                                               Score 92.5; DB 2; Length 519; Pred. No. 0.38;
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Pred. No. 0.21;
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                                                                                                                                                                                                                                                             Indels 83;
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                                                                                                   RESULT 11
US-08-978-277A-4
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            ; Sequence 4, Application U
; Patent No. 6582956
; GENERAL INFORMATION:
APPLICANT: Gelman, IX
TITLE OF INVENTION: T
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION NUMBER: US/09/252,991A CURRENT FILING DATE: 1999-02-18 PRIOR APPLICATION NUMBER: US 60/074,788 PRIOR FILING DATE: 1998-02-18 FILING DATE: US 60/094,190 PRIOR APPLICATION NUMBER: US 60/094,190 PRIOR FILING DATE: 1998-07-27 NUMBER OF SEQ ID NOS: 33142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 664
TYPE: PRT
ORGANISM: Pseudomonas aeruginosa
 NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                           149
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                                                                                                                                                                     DARVGVTEHID--PPGTDRVDVALAFEILQPDAFAAADRDHR 576
                                                                                                                                                                                                                                                                                                                                                                                                                                               HROVATGEGLGQAEEIRGDAGLLAGEHR-PGAAEAHRDLVVDQVHAIAVAGFAQQLEVDR
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                                                                                                                                                                                                     -VRVGLAPEMEEPPPATPRRPI-----DEVFHVRAKDHR 331
                                                                                                                                                                                                                                      FQRDLDARRAAVG---VEHPVEPRRGDLHQSLRQLDHRLVAESGEDHVLQLVDLVLDALV
                                                                                                                                                                                                                                                                      ----LDATMAGLATCTLTHITE-----LHAS-RDLVAALIGQPATPQAL------
                                                                                                                                                                                                                                                                                                      DGVEQQRLVGFGE-----QRHVAHRHRRDGFAVVAVGQGDEALLARPAAIEPEVVAH
                                                                                                                                                                                                                                                                                                                                            VSAAESDRVTFGRDFPVVANTDRRPEFGHDRSKVLVLSTYDNERASLLRCGEMLSAVL--
                                                                                                                                                                                                                                                                                                                                                                            VVHAHAAGALDQRFDDDRGDLVVP---FGQGALHVGEHVPRMFFPAHAVRTQEAVRAGHL
                                                                                                                                                                                                                                                                                                                                                                                                             V-----RIDVIADDMRPELAAASKLTESLRLYDSSYHAELFWWTGAFETSEGIPHSSL
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                                 Irwin H
                                                                                   US/08978277A
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                 SUPPRESSOR GENE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2;
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                                                                                                                                                                                                                                                                                                                                                                                                               201
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; ORIGINAL SOURCE:
US-08-978-277A-4
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                                                                                                   RESULT 12
US-09-248-796A-20009
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Sequence 20009, Application US/09248796A
Patent No. 6747137
GENERAL INFORMATION:
APPLICANT: Keith Weinstock et al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO CANDIDA ALBICAN.
TITLE OF INVENTION: FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
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SEQUENCE CHARACTERISTICS:
LENGTH: 1596 amino acids
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ANTI-SENSE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/6
FILING DATE: 18-JUN-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY: USA
ZIP: 10112-0228
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION DATA:
APPLICATION NUMBER: US
FILING DATE:
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CITY: New York
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ATTORNEY/AGENT INFORMATION:
NAME: Clark, Richard S
REGISTRATION NUMBER: 26,154
REFERENCE/DOCKET NUMBER: A305
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212,408-2558
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COMPUTER: 150.

OPERATING SYSTEM: DOS

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                                                                                                                                                                                                                                                                                    1046 SKALEKVEEVEEDSEVLA----SEKEKDVMPKGPVQEAGAEHLAQGSETGQATPESLEVP 110:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              929 LTQT--LPEGKDAHDDMVTSEVDFTSEAVTATETSEALRTEEVTEASGAEETTDMVSAVS
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EVTADVDHVATC--QVIKLQQLMEQAVAPESSE 1132
                                                                                                                               ELHASRDIVAALIGOPATPOALVRVGLAPEMEE 309
                                                                                                                                                                                                                                                                                                                                                                                                                           ----RPEFGHDRSKVLVLSTYDNERASLLRCGEMLSA---VLLDATMAGLATCTLTHIT 276
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Pred. No. 4
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APPLICANT: Goldman, Barry S.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
FIITLE OF INVENTION: Myxococcus xanthus Genome Sequences and FILE REFERENCE: 38-10(15849)B
CURRENT APPLICATION NUMBER: US/09/902,540
CURRENT FILING DATE: 2001-07-10
PRIOR APPLICATION NUMBER: 60/217,883
PRIOR APPLICATION NUMBER: 60/217,883
PRIOR FILING DATE: 2000-07-10
NUMBER OF SEQ ID NOS: 16825
SEQ ID NO 15386
LENGTH: 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; FILE REFERENCE: 107196.132
; CURRENT APPLICATION NUMBER: US/09/248,796A
; CURRENT FILING DATE: 1999-02-12
; PRIOR APPLICATION NUMBER: US 60/074,725
; PRIOR FILING DATE: 1998-02-13
; PRIOR APPLICATION NUMBER: US 60/096,409
; PRIOR APPLICATION NUMBER: US 60/096,409
; PRIOR FILING DATE: 1998-08-13
; NUMBER OF SEQ ID NOS: 28208
; SEQ ID NO 20009
; ENGTH: 285
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US-09-902-540-15386
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; ORGANISM: Candida albicans
US-09-248-796A-20009
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                                                                                                                                                                                                                                Matches
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Best Local :
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                                                                                                                                                                                                                                                                                                                          ORGANISM: Myxococcus xanthus
                                                                                                                                                                                                                                                                                                                                                 TYPE: PRT
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                                                                                                                                                                                                                                                ocal Similarity
                                                                                                                 111
                                     160 PELAAASKLTESLRLYDSSYHAELFWW-----TGAFETSEGIPHSSLVSAAESD--
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                                                                                                                                                                                        61 LGCGAVLDHFRVAMAAAGTTANVERFP-NPNDPLHLASIDFSPAD-FVTEGH-----
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                                                                           ATGSDWEDCERRLDALEVHVRTATPTAPRVPPAMDGPTSAYRSNFTLDAY------
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                                                                                                                                                     LFCGGAVGFFGYEAAHC----FESLPRHPRDDLHLPEIDLSFIDTFLTVDHHEGQLLLV
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--LDAVERVREYIRAGD-TYQVNLSQRLEVDFPGEPLALYETLSAINPVHFASYLEGDGF
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                                                                                                                                                                                                                                Conservative
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                                                                                                               -RLRADAILLRRTDRLPFAE--PPDWDLVESQLRTTVTADTVRIDVIADDMR 159
                                                                                                                                                                                                                                              5.2%;
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24.3%; Pred. No.
                                                                                                                                                                                                                              23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             34;
                                                                                                                                                                                                                          Score 89.5; DB 2; Length 371; Pred. No. 0.48; Indels 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0.27;
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                                     208
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US-08-804-227C-11
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US-09-489-039A-14063
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Gary Breton et. al
APPLICANT: GARY Breton et. al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA
TITLE OF INVENTION: PREUMONIAE FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 2709.2004001
CURRENT APPLICATION NUMBER: US/09/489,039A
CURRENT FILING DATE: 2000-01-27
PRIOR APPLICATION NUMBER: US 60/117,747
PRIOR FILING DATE: 1999-01-29
NUMBER OF SEQ ID NOS: 14342
SEQ ID NO 14063
                                                                                                                                    Sequence 11, Application US/08804227C Patent No. 5876991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 14063, Appendix No. 6610830
                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: PRT ORGANISM: Klebsiella pneumoniae
APPLICANT: DeHoff, Bradley S.
APPLICANT: Kubetoss, Stuart A.
APPLICANT: Rosteck, Paul R., Jr.
APPLICANT: Sutton, Kimberly L.
TITLE OF INVENTION: POLYKETIDE SYNTHASE GENES
NUMBER OF SEQUENCES: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    165 HVVSASPERLVRVENGRATTRPIAGTRRRGTPEEBARFVHE-----LRTNEKERAE---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60 LLGCGAV-------LDHFRVAMAAAGTTANVERFPNPNDPLHLASIDFSPADFV 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              502
                                                                                                                                                                                                                                                       QRELIDSAFH 259
                                                                                                                                                                                                                                                                                                                                                                                                             QIAARMGNAGGILAN---
                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----FGRDFPVVANTDRRPEFGHDRSKVLVLSTYDNERASLLRCGEMLSAVLLDATMAG 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KLTESLRLYDSSYHAELFWWTGAF---ETSEGIPHSSL-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PLRRSIRVNTLKISVDDFLSLVAPYGWQLAP----VPWCAEGFWIEREDDDALPLGSTAE 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TEGHRLRADAILLRRTDRLPFAEPPDWDLVESQLRTTVTADTVRIDVIADDMRPELAAAS 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LFFCGALPVAENTVYFPEAFLAQMRAAM------PAHLSFDDFIAACQR 60
                                                                                                                                                                                                                                                                                               PRRPIDEVFH 324
                                                                                                                                                                                                                                                                                                                                   ISNVALTHFDGRVFGAALPETFD--AILLDAPCSGEGVVRKDADALKNWSPDSNLDIAAT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----SGLFYIQEASSMLPVAALFADNRQPERVMDVAAAPGSKTT
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                                                                                                                                                                                                                                                                                                                                                                                                               -EFSASRVKVL
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Best Local Similarity
Matches 88; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY: USA
COUNTRY: USA
ZIP: 46285
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM Compatible
OPERATING SYSTEM: MS-DOS
SOFTWARE: ASCI(DOS) Text only
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/804,227C
FILING DATE: February 21, 1997
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Plant, Thomas, G.
REGISTRATION NUMBER: 35,784
REFERENCE/DOCKET NUMBER: X.8231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE: 317-276-2459
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1580 amino acids
TYPE: amino acid
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELECOMMUNICATION INFORMATION: TELEPHONE: 317-276-2459 IFORMATION FOR SEQ ID NO: 11:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
ADDRESSEE: THOMAS G. PLANT 1501
STREET: LILLY CORPORATE CENTER
CITY: INDIANAPOLIS
STATE: IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: amir
  1029
                                                                                                                                                                    918 GRRAVEAAPVDASAPGRYRVTW---TPVASDDSGRPS----GRWLLVQTPGTAPDEADT
                                           304 AP------EMEEPPPATPRRPI 319
                                                                                     970 AASALGAAGVVVERCLLDPTEAARVTLT-ERLAELDAQPEGLAGVLVLPGRPQSTAPADA 1028
                                                                                                                                                                                                     200 --SLVSAAESD------RVTFGRDFPVVANTDRRPEFGHDRSKVLVLST------YDN 243
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                                                                                                                                                                                                                                                                                                                                                                                 131 PD-----W-----DLVE--SQLRTTVTAD------TVRIDVIADDMRPELAA 164
                                                                                                                             244 ERASILRCGEMISAVILIDATMAGIATCTITHITELHASRDIVAALIGQPATPQAIVRVGI 303
                                                                                                                                                                                                                                                        858 LATLHRGSGGLDRFRSSVGAAFAHGVRVDWDALFEGSGARRVPLPTYAFSRDRYWLPTAI 917
                                                                                                                                                                                                                                                                                                                                                                                                                             752 -----LAGVDFA-----GHSPQVEQFRAELLDTLGTVRPTAARLPFFSTVTAAAHE 797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 709 EPW---AERMSVA-----AVNGPASVTVAGDARALEEFGGRLSAAG----VLRWP 751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  88 NPNDPLHLASIDFSPADFVTEGH-----RLRADAI----LLRRT-DRLPF------AEP 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28 QPWRWIAEDHTVALFLDKDRVLYATDHSGREALLGCGAVLDHFRVAMAAAGTTANVERFP 87
                                                                                                                                                                                                                                                                                                ASKL---TESLRLYDSSY-----HAELFWWTGAFETSEG------IPHS- 199
SPLDPGTAAVLLVVQAVPDAAPKARI 1054
                                                                                                                                                                                                                                                                                                                                            PEGLDAAYWYRNMREPVEFASTLRTLLREGHRTFVEMGPHPLLGAAIDEVAEAEGVHATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5.2%; Score 89; DB 1; Length 1580; ilarity 22.8%; Pred. No. 5.7; Conservative 44; Mismatches 120; Indels 134;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  unknown
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Search completed: March 23, 2006, 05:30:15 Job time: 23.6753 secs

(otasu) Anola agod sint

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Result
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Maximum Match 100%
Listing first 45 summaries
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB seq length: 0
DB seq length: 2000000000
Score
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Match
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1718
1 MPDTMVTTDVIKSA
Published Applications AA Main:*

1: /cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*

2: /cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*

3: /cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*

4: /cgn2_6/ptodata/1/pubpaa/US10A_PUBCOMB.pep:*

5: /cgn2_6/ptodata/1/pubpaa/US10B_PUBCOMB.pep:*

6: /cgn2_6/ptodata/1/pubpaa/US11_FUBCOMB.pep:*
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1986.885 Million cell updates/sec
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(c) 1993 - 2006 Biocceleration Ltd.
                    US-10-617-038-25
US-10-617-038-26
US-10-139-002-244
US-10-139-002-244
US-10-084-898-249
US-11-028-898-249
US-11-028-898-249
US-11-028-139-005-244
US-10-617-038-40
US-10-267-255-139-005-10-267-255-139-005-10-166-761-129-005-10-166-761-1435
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US-10-156-761-1343-31
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                         30, Appl
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|---|---------------------|--------------------|-----------------|----------------------|----------------------|---------------------|---------------------|----------------------|----------------------|------------------|------------------|---------------------|---------------------|---------------------|----------------------|--------------------|--------------------|----------|
| .4 431<br>.4 431<br>.4 761<br>.4 1360<br>.4 1360<br>.4 1360<br>.4 7349<br>.4 7349<br>.5 750<br>.6 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 750<br>.7 7 | 90                  | 90                 | 90.5            | 90.5                 | 90.5                 | 90.5                | 91                  | 91.5                 | 91.5                 | 92.5             | 92.5             | 92.5                | 92.5                | 92.5                | 93                   | 93                 | 93                 |          |
| <b>ፈ ፋ ፋ ፋ ቴ ነን ሀን ፋ ነን ላ ሳ ፋ ነን ላ ሳ ሳ ነን</b>   | 5.<br>2             | 5.2                | 5.3             | 5.3                  | 5.3                  | 5. <sub>3</sub>     | 5.3                 | 5.3                  | 5.3                  | 5.4              | ت.<br>4.         | 5.4                 | 5.4                 | 5.4                 | 5.4                  | 5.4                | 5.4                | 5.4      |
|   | 525                 | 321                | 1596            | 841                  | 457                  | 421                 | 1016                | 750                  | 750                  | 7349             | 7349             | 1444                | 1360                | 218                 | 932                  | 761                | 431                | 915      |
| US-10-156-761-100-0 US-10-087-192-1644 US-10-186-761-7913 US-10-186-761-10291 US-10-186-761-10291 US-10-732-923-20591 US-10-732-923-17028 US-10-732-923-17028 US-10-282-122A-64569 US-10-282-122A-64569 US-10-282-122A-63748 US-10-282-122A-6409 US-10-282-122A-54009 US-10-882-122A-54009 US-10-473-143-28077  | σ                   | 4                  | w               | 4                    | 4.                   | v                   | 4                   | 4                    | 4                    | ហ                | 4                | ທ                   | σ                   | 4                   | 4                    | 4                  | 4                  | 4        |
|   | US-11-097-143-22077 | US-10-451-467A-428 | US-09-902-432-4 | US-10-282-122A-54009 | US-10-282-122A-63748 | US-10-732-923-11413 | US-10-156-761-10696 | US-10-282-122A-64569 | US-10-282-122A-62636 | US-10-473-193-46 | US-10-314-657-46 | US-10-732-923-17028 | US-10-732-923-20591 | US-10-156-761-10291 | US-10-282-122A-62242 | US-10-156-761-7913 | US-10-087-192-1644 |          |
|   | 22077, A            | 428, App           | 4, Appli        | 54009, A             | 63748, A             | 11413, A            | -                   | 64569, A             | ,0                   | 46, Appl         | 46, Appl         | 17028, A            |                     | 10291, A            |                      |                    | 1644, Ap           | TOUSO, A |

### ALIGNMENTS

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US-10-617-038-25
US-10-617-038-25
Sequence 25, Application US/10617038
Publication No. US20040057963A1
GENERAL INFORMATION:
APPLICANT: Andersen, Peter
APPLICANT: Rosenkrands, Ida
APPLICANT: Stryhn, Anette
FILE REFERENCE: SSI5AUSA
CURRENT APPLICATION NUMBER: US/10/617,038
CURRENT APPLICATION NUMBER: US/10/617,038
PRIOR APPLICATION NUMBER: DK PA 2002 01098
PRIOR APPLICATION NUMBER: US 60/401,725
PRIOR FILING DATE: 2002-07-13
PRIOR FILING DATE: 2002-08-07
NUMBER OF SEQ ID NOS: 187
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SEQ ID NO 25
LENGTH: 331
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                                                                             YDNERASLLRCGEMLSAVLLDATMAGLATCTLTHITELHASRDLVAALIGQPATPQALVR
                                                                                                                                                      AELFWWTGAFETSEGIPHSSLVSAAESDRVTFGRDFPVVANTDRRPEFGHDRSKVLVLST 240
                                                                                                                                                                                                                             RTDRLPFAEPPDWDLVESQLRTTVTADTVRIDVIADDMRPELAAASKLTESLRLYDSSYH 180
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                                                                                                                                 AELFWWTGAFETSEGIPHSSLVSAAESDRVTFGRDFPVVANTDRRPEFGHDRSKVLVLST
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301 VGLAPEMEEPPPATPRRPIDEVFHVRAKDHR 331

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CURRENT APPLICATION NUMBER: US/10/617,038
CURRENT FILING DATE: 2003-07-11
PRIOR APPLICATION NUMBER: DK PA 2002 01098
PRIOR FILING DATE: 2002-07-13
PRIOR APPLICATION NUMBER: US 60/401,725
PRIOR FILING DATE: 2002-08-07
NUMBER OF SEQ ID NOS: 187
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                                                                                                                                                                                                                                                                 Sequence 244, Application US/10193002
Publication No. US20030135026A1
GENERAL INFORMATION:
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APPLICANT: Andersen, Peter
APPLICANT: Rosenkrands, Io
APPLICANT: Stryhn, Anette
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TITLE OF INVENTION: Therapeutic TB Vaccine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 344
TYPE: PRT
ORGANISM: Mycobacterium tuberculosis
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                                          Twardzik, Daniel R.
Lodes, Michael J.
Lodes, Michael J.
Hendrickson, Ronald C.
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR DIAGNOSIS OF
  NUMBER OF
                                                                                                                                                                                                                                                   APPLICANT: Reed, Steven G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            306 EMEEPPPATPRRPIDEVFHVR 326
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                                                                                                                                                                                                                                                                                                                                                                                                                                  301 PLAAVPAPTPRRPLDSVLQIR 321
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 VLDHLRIAMTAAHWQANITRFPQPNQPDQLATVEFSPIDHVTAGQRNRAQAILQRRTDRL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10 VIKSAVQLACRAPSLHNSQPWRWIAE---DH-TVALFLDKDRVLYATDHSGREALLGCGA 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           66 VLDHFRVAMAAAGTTANVERFPNPNDPLHLASIDFSPADFVTEGHRLRADAILLRRTDRL 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 VLKNAVLLACRAPSVHNSQPWRWVAESGSEHTTVHLFVNRHRTVPATDHSGRQAIISCGA 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WTSPFVLAHGVPPDTLASDAERLRVDLGRDFPVRSYQNRRAELADDRSKVLVLSTPSDTR 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PFDSPMYWHLFEPALRDAVDKDVAMLDVVSDDQRTRLVVASQLSEVLRRDDPYYHAELEW 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADALRCGEVLSTILLECTMAGMATCTLTHLIESSDSRDIVRGLTRQRGEPQALIRVGIAP 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
SEQUENCES:
                                                                                                                                                                          Skeiky, Yasir A.W.
Dillon, Davin C.
Campos-Neto, Antonia
                                                                                                                                   Houghton, Raymond
Vedvick, Thomas S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 53.3%; Score 915; DB 4; Length 344; 56.7%; Pred. No. 3.2e-83;
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                       TUBERCULOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 39; Mismatches
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US-10-084-843-249
Sequence 249, Application US/10084843
Publication No. US20030143243A1
GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION FOR SEQ ID NO: 244: SEQUENCE CHARACTERISTICS: LENGTH: 104 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                  Vedvick, Thomas S.
Vedvick, Thomas S.
Twardzik, Daniel R.
Lodes, Michael J.
Hendrickson, Ronald C.
Hendrickson, Ronald C.
AND DIAGNOSIS OF TUBERCULOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY: linear
MOLECULE TYPE: protein
SEQUENCE DESCRIPTION: SEQ ID NO: 244:
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NAME: Maki, David J.

REGISTRATION NUMBER: 31,392

REFERENCE/DOCKET NUMBER: 210121.417C9

TELECOMMUNICATION INFORMATION:

TELEPHONE: (206) 622-4900
                                                            CORRESPONDENCE ADDRESS:
ADDRESSEE: SEED and BERRY LLP
STREET: 6300 Columbia Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/09/072,596
FILING DATE: 05-MAY-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
ADDRESSEE: SEED and BERRY LLP
                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Reed, Steven G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          134 DLVESQLRTTVTADTVRIDVIADDMRPELAAASKLTESLRLYDS 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     104; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          74 MAAAGTTANVERFPNPNDPLHLASIDFSPADFVTEGHRLRADAILLRRTDRLPFAEPPDW 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MAAAGTTANVERFPNPNDPLHLASIDFSPADFVTEGHRLRADAILLRRTDRLPFABPPDW
STATE: Washington COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DLVESQLRTTVTADTVRIDVIADDMRPELAAASKLTESLRLYDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
                                            CITY: Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/10/193,002 FILING DATE: 10-Jul-2002 CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: Seattle
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                                                                                                                                                                                                                                                                                                                        Skeiky, Yasir A.W.
Dillon, Davin C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30.8%; Score 529; DB 4; 1
100.0%; Pred. No. 4.8e-45;
ative 0; Mismatches 0;
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                                                                701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 104;
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APPLICANT: ROSENKrands, Ida
APPLICANT: Stryhn, Anette
FIITLE OF INVENTION: Therapeutic TB Vaccine
FILE REFERENCE: SS15AUSA
CURRENT APPLICATION NUMBER: US/10/617,038
CURRENT FILING DATE: 2003-07-11
PRIOR APPLICATION NUMBER: DA 2002 01098
PRIOR FILING DATE: 2002-07-13
PRIOR APPLICATION NUMBER: US 60/401,725
PRIOR APPLICATION NUMBER: US 60/401,725
PRIOR FILING DATE: 2002-08-07
NUMBER OF SEQ ID NOS: 187
SOFTWARE: PatentIn version 3.2
SEQ ID NO 40
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Best Local S
Matches 104
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                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Andersen, Peter APPLICANT: Rosenkrands, IC APPLICANT: Stryhn, Anette
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                                                                                                                                                                                                                                                                                                                                                                                                                                        ENGTH: 332
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REGISTRATION NUMBER: 31,392
REFERENCE/DOCKET NUMBER: 210
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 622-4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS: single TOPOLOGY: linear MOLECULE TYPE: protein SEQUENCE DESCRIPTION: SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
LENGTH: 104 amino acids
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  175
                                                                                                                                                                                                                                                                                              120;
                                                                                117 ILLRRTDRLPFA--EPPDWDLVESQLRTTVTADTVRIDVIADDMRPELAAASKLTESLRL 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 134 DLVESQLRTTVTADTVRIDVIADDMRPELAAASKLTESLRLYDS 177
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Similarity 100.0%; Pred. No. 4.8e-45;
04; Conservative 0; Mismatches 0;
YDSSYHAELFWWTGAFETSEGIPHSSLVSAAESDRVTFGRDF--PVVAN-TDRRPEFGHD 231
                                                                                                                         SCGVALHHCVVALASLGWQAKVNRFPDPKDRCHLATIGVQPLVPDQADVAL-----AAA 115
                                                                                                                                                                  GCGAVLDHFRVAMAAAGTTANVERFPNPNDPLHLASIDFSP----ADFVTEGHRLRADA 116
                                                                                                                                                                                                                               PDTMVTTDVIKSAVQLACRAPSLHNSQPWRWIAEDHTVALFLDKDRVLYATDHSGREALL 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DLVESQLRTTVTADTVRIDVIADDMRPELAAASKLTESLRLYDS 104
                                         IPRRRTDRRAYSCWPVPGGDIALMAARAARGGVMLR-QVSALDRMKAIVAQAVLD---HV 171
                                                                                                                                                                                                         PD----AETVRTVLTLAVRAPSIHNTOPWRWRVCPTSLELFSRPDMQLRSTDPDGRELIL 61
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                                                                                                                                                                                                                                                                                                               24.3%; Score 417; DB 4; Length 332; 36.1%; Pred. No. 4.9e-33;
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                                                                                                                                                                                                                                                                                           45;
                                                                                                                                                                                                                                                                                           Mismatches
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                                                                                                                                                                                                                                                                                           139;
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                                                                                                                                                                                                                                                                                         Indels
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US-10-267-255-139
Sequence 139, Application US/10267255
Publication No. US20030124689A1
GENERAL INFORMATION:
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APPLICANT: Sheldon, Paul
TITLE OF INVENTION: MITOMYCIN BIOSYNTHETIC GEI
FILE REFERENCE: 600.530US1
CURRENT APPLICATION NUMBER: US/09/953,348
CURRENT FILING DATE: 2001-09-12
PRIOR APPLICATION NUMBER: PCT/US00/06394
PRIOR APPLICATION NUMBER: 090266965
PRIOR PILING DATE: 1999-03-12
PRIOR FILING DATE: 1999-03-12
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SOFTWARE: FastSEQ for Windows Version
SEQ ID NO 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 139, Appropriate Publication No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Sherman, David. H
APPLICANT: Mao, Yingqing
APPLICANT: Varoglu, Mustafa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: PRT
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                                                                                                                                                                                                              331
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                                                                                                                                                                                                                                                                                        271
                                                                                                                                     384
                                                                                                                                                                                                                                                                                                                                                                                                                                         161 VHAELKRRNPRNLVGGPYAVVDHDPPAEDAADRSRELRGPWGELDQRSADVIRYWN----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  107
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                                                                                                                                                                                                                                                                                                                          150 RIDVIADDMRP-----ELAAASKLTESLRLYDSSYHAELFW--
                                                                                                                                                                                                                                                                                                                                                                                                    93 LHLASIDFSPAD---FVTEGHRLRADAILLRRTDRLPFAEPPDWDLVESQLRTTVTADTV 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             53 DH-----SGREALLGCGAVLDHFRVAMAAAG-----TTANVERFPNPNDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           73;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TDEEYLRELTIWSGRYGSVAGVPARNEPPSDPSAPIP-GRLFAGPGLSQPSDVLP--ADD
                                                                                                                                   VNT 386
                                                                                                                                                                        LST 240
                                                                                                                                                                                                              THIRDGGGELPMAGLLS
                                                                                                                                                                                                                                                 AFETSEG--IPHSSLVSAAESDRVTFGRDFP-----VVANTDRRPEFGHDRSKVLV 237
                                                                                                                                                                                                                                                                                                                                                               AHKAGADFVVVDGSSYTREGHRAIPDE--FAATEK--FADVTRW--VRSVTGLPVWWAEW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PDPRHYADFARLAGVIAQRYPDIRHFLVW-----NELKGFYDEDRRRWDYEGYTRLYNL 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PDTMVTTDVIKSAVQLACRAPSLHNSQPWRWIAEDHTVALFLDKDR------VLYAT 52
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                                                                                                                                                                                                                                                                                    YVEPPAEDDRPGGRDGWGEGHRTAVQATAMMRLAESGASAAFYWNPQRTGKACPGCLWRS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6.2%; Score 106.5; D
24.1%; Pred. No. 0.14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           32; Mismatches 111;
                                                                                                                                                                                                              -RFAREFPPGTAFRPVAVTCGSGDRVEALADEAAVLV
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APPLICANT: Sherman, D

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk

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US-11-028-898-249
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Publication No. US2005
GENERAL INFORMATION:
Reed
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION FOR SEQ ID NO: 249: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US/09/072,967
FILING DATE: 05-MAY-1998
ATTORNEY/AGENT INFORMATION:
NAME: MAKL, David J.
REGISTRATION NUMBER: 31,392
REGISTRATION NUMBER: 210121.411C9
TELEPHONE: (206) 622-4900
TELEPHONE: (206) 622-4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Match
Local Similarity 100.0%; Pred. No. 4.8
Conservative 0; Mismatches
                                                                                                                                                                                                                                                                              Houghton, Raymona
Vedvick, Thomas S.
Twardzik, Daniel R.
Lodes, Michael J.
Lodes, Michael J.
Hendrickeon, Ronald C.
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR IMMUNOTHERAPY
AND DIAGNOSIS OF TUBERCULOSIS
               COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IEM PC compartible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.30

CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
SEQUENCE DESCRIPTION: SEQ ID NO: 249:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/10/084,843
FILING DATE: 25-Feb-2002
CLASSIFICATION: «Unknown»
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              134 DLVESQLRTTVTADTVRIDVIADDMRPELAAASKLTESLRLYDS 177
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  74 MAAAGTTANVERFPNPNDPLHLASIDFSPADFVTEGHRLRADAILLRRTDRLPFAEPPDW 133
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                                                                                                                                            STATE: Washington
COUNTRY: USA
ZIP: 98104-7092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DLVESQLRTTVTADTVRIDVIADDMRPELAAASKLTESLRLYDS 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
APPLICATION NUMBER: US/11/028,898
                                                                                                                                                                                                            CITY: Seattle
                                                                                                                                                                                                                                ADDRESSEE: SEED and BERRY LLP STREET: 6300 Columbia Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: (206) 682-6031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 104 amino acids
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Campos-Neto, Antonio
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Dillon, Davin C.
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                                                                                                                                                                                                                                     701 Fifth Avenue
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; Sequence 244, Application US/11082005; Publication No. US20050181419A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 6
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: (206) 682-60: INFORMATION FOR SEQ ID NO: 249:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/10/084,843
FILING DATE: 03-191-2005
APPLICATION NUMBER: US/09/072,967
FILING DATE: 05-MAY-1998
ATTORNEY/AGENT INFORMATION:
NAME: MAKI, DAVID J.
REGISTRATION NUMBER: 31,392
REGISTRATION NUMBER: 210121.411C9
TELEPHONE: (206) 622-4900
TELEPHONE: (206) 622-4900
                                                                            COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: 1BM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTMARE: PatentIn Release #1.0, Version #1.30

CURRENT APPLICATION DATA:

APPLICATION UMBER: US/11/082,005

ETLING DATE: 15-Mar-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                           Lodes, Michael J.

Hendrickson, Ronald C.
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR DIAGNOSIS OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY: linear
MOLECULE TYPE: protein
SEQUENCE DESCRIPTION: SEQ ID NO: 249:
                                         PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES: 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                134 DLVESQLRTTVTADTVRIDVIADDMRPELAAASKLTESLRLYDS 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     74 MAAAGTTANVERFPNPNDPLHLASIDFSPADFVTEGHRLRADAILLRRTDRLPFAEPPDW 133
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MAAAGTTANVERFPNPNDPLHLASIDFSPADFVTEGHRLRADAILLRRTDRLPFAEPPDW
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 104 amino acids
TYPE: amino acid
STRANDEDNESS: single
APPLICATION NUMBER: US/10/193,002 FILING DATE: 10-Jul-2002
                                                                                                                                                                                                                                                                                           STATE: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 03-Jan-2005
                                                             CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                          COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: SEED and BERRY LLP
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Vedvick, Thomas S.
Twardzik, Daniel R.
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Dillon, Davin C.
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; Pred. No. 4.8e-45;
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PRIOR APPLICATION NUMBER: US 09/266,965
PRIOR FILING DATE: 1999-03-12
PRIOR PELICATION NUMBER: US 08/624,447
PRIOR PELICATION NUMBER: US 08/624,447
PRIOR FILING DATE: 1996-08-19
PRIOR APPLICATION NUMBER: PCT/US94/11279
PRIOR FILING DATE: 1994-10-07
PRIOR FILING DATE: 1993-10-07
NUMBER OF SEQ ID NOS: 145
SOPTWARE: PASUSEQ for Windows Version 3.0
SEQ ID NO 139
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                                                                                                                                                                                                                                                                                                                      Sequence 48196, Application US/10282122A Publication No. US20040029129A1 GENERAL INFORMATION:
                                                                                                                                                  APPLICANT:
APPLICANT:
APPLICANT:
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                                                            APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                               APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlc
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Rot
APPLICANT: Ohlsen, Kari
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Varoglu, M
APPLICANT: He, M
APPLICANT: Sheldon, P
TITLE OP INVENTION: Mitomycin biosynthetic gene cluster
FILE REFERENCE: 600.456US1
CURRENT APPLICATION NUMBER: US/10/267,255
CURRENT FILING DATE: 2002-10-09
TITLE OF INVENTION: Identification of Essential Genes in Microorganisms FILE REFERENCE: ELITRA.034A CURRENT APPLICATION NUMBER: US/10/282,122A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: PRT
ORGANISM: Streptomyces lavendulae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     331 THLRDGGGELPMAGLLS----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         271 YVEPPÄEDDRPGGRDGWGEGHRTAVQATAMMRLAESGASÄAFYWNPQRTGKACPGCLWRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    150 RIDVIADDMRP-----ELAAASKLTESLRLYDSSYHAELFW------WTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               161 VHAELKRRNPRNLVGGPYAVVDHDPPAEDAADRSRELRGPWGELDQRSADVIRYWN----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     107
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          h 6.2%; Score 106.5; Di Similarity 24.1%; Pred. No. 0.14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LHLASIDFSPAD----FVTEGHRLRADAILLRRTDRLPFAEPPDWDLVESQLRTTVTADTV 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DH-----SGREALLGCGAVLDHFRVAMAAAG------TTANVERFPNPNDP
                                                                                                                                                Zyskind, Judith
Wall, Daniel
Trawick, John
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AFETSEG--IPHSSLVSAAESDRVTFGRDFP-----VVANTDRRPEFGHDRSKVLV 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AHKAGADFVVVDGSSYTREGHRAIPDE--FAATEK--FADVTRW--VRSVTGLPVWWAEW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PDPRHYADFARLAGVIAQRYPDIRHFLVW-----NELKGFYDEDRRRWDYEGYTRLYNL
                                                                                                     Carr, Grant
Yamamoto, Robert
                                                                                                                                                                                                               Haselbeck, Robert
Ohlsen, Kari
                                                                                 Forsyth, R.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                Carlos
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 413;
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                                                                            GENERAL INFORMATION:
APPLICANT: OMURA, SATOSHI
APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
APPLICANT: HORIKAWA, HIROS
APPLICANT: SHIBA, TADAYOSH
APPLICANT: SHIBA, TADAYOSH
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US-10-156-761-12910
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US-10-282-122A-48196
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PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILLING DATE: 2000-03-21
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
PRIOR FILING DATE: 2000-05-26
PRIOR FILING DATE: 2000-05-26
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Matches
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SEQ ID NO 48196
LENGTH: 380
                                                                                                                                                                                                               Sequence 12910, Application US/10156761
Publication No. US20030119018A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
           APPLICANT: ISHIKAWA, JUN
APPLICANT: HORIKAWA, HIROSHI
APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS: 78614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: 60/269,308
PRIOR FILING DATE: 2001-02-16
Remaining Prior Application data removed - See File Wrapper or PALM.
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PRIOR FILING DATE: 2000-12-22
PRIOR APPLICATION NUMBER: 60/267,636
PRIOR FILING DATE: 2001-02-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: 60/242,578 PRIOR FILING DATE: 2000-10-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: 60/230,347 PRIOR FILING DATE: 2000-09-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: 60/253,625
PRIOR FILING DATE: 2000-11-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR FILING DATE: 2000-09-06
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    REFERENCE: 249-262
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                                                                                                                                                                                                                                                                                                                                               308 FDEEEKAAALKRRPVDFKTFGIGAQ 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             246 ASILRCGEMISAVILDATMAGLATCTLTHITELHASRDI-VAALIGQPATPQALVRVGLA 304
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              66 VLDHFRVAMAAAGTTANVERFPNPNDPLHLASIDFSPADFVTEGHRLRADAILLRRTDRL 125
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VTTGISAADRAHTIATAVAHDVRPEHIVQPGHVFPILAQPGGVLVRAGHT--EA--GCDF 150
                                                                                                                                                                                                                                                                                                                                                                                        PEMEEPPPATPRRPID-EVFHVRAK 328
                                                                                                                                                                                                                                                                                                                                                                                                                                     -DLLETGVSTHSWTLDAAMRDI-----
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118;

Indels

94;

Gaps

65

-AERDLGVIVLLNCGDTKEHLIDVFKA

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APPLICANT: Boukharov, Andrey A.

APPLICANT: Barbaruk, Brad

ITITE OF INVENTION: Rice Nucleic Acid Molecules and Other Molecules Associated With

ITITE OF INVENTION: Plants and Uses Thereof for Plant Improvement

FILE REFERENCE: 38-21(53221)B

CURRENT APPLICATION NUMBER: US/10/437,963

CURRENT FILING DATE: 2003-05-14

NUMBER OF SEQ ID NOS: 204966

SEQ ID NO 17042

LENGTH: 682

TYPE: PRT

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                                                                                                            ; OTHER INFORMATION: Clone ID: PAT_MRT4530_74733C.1.pep
US-10-437-963-177042
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US-10-437-963-177042
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LENGTH: 441
TYPE: PRT
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Publication No. US20040123343A1
  Matches
                               Best Local Similarity
                                                         Query Match
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CURRENT FILLING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR FILING DATE: 2001-05-30
PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
                                                                                                                                                                   ORGANISM: Oryza sativa FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             235
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  69;
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Conservative
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                         5.8%; Score 99.5; DB 4; 22.8%; Pred. No. 1.4;
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  30;
  Mismatches 127;
                                                   Length 682;
Indels
  77;
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US-10-156-761-7961
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Best Local
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APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL FOLYNUCLEOTIDES
FILE REFERENCE: 249-262
CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: UF 2001-204089
PRIOR FILING DATE: 2001-05-30
PRIOR FILING DATE: 2001-05-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Streptomyces avermitilis US-10-156-761-7961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 7961
LENGTH: 3352
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: OMURA, SATOSHI
APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
APPLICANT: HORIKAWA, HIR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
nes 70; Conserv
                                                                                                                                                                                                                                                                                           2224 -GPAALTVSG------
                                                                                                                                                                                                                                                                                                                                             100 FSPADFVTEGHRLRADAILLRRTDRLPFAEPPDWDLVESQLRTTVTADTVRIDVI----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                             40 ALFLOKDRVLYATOHSGREALLGCGAVLDHFRVAMAAAGTTANVERFPNPNDPLHLASID
  VLSTYDNERASLLRCGEMLSAVLLDATMAGLATCTLTHITELHASR----DLVAALIGQPA
                                                              WTVRTLLADGHGVF---VECSPHPLLADAVQEIAEETGAD-AVTGSSLRRGQGGMDR----
                                                                                                                                                                           AGHSTQVESLRPELLHLLAPVAPGAAEVPYYSTVTGTVLDTTTLDAEYWYRNARHTVEFE 2319
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                                                                                                                                                                                                                                ----ADDMRPEL----YDSSYHAELFW
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HORIKAWA, HIROSHI
                                                                                                                   -----GAFETSEGIPHSSLVSAAESDRVTFGRDFPVVANTDRRPEFGHDRSKVL
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; Pred. No. 20;
32; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4; Length 3352;
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APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
ITITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: UP 2001-204089
PRIOR FILING DATE: 2001-05-30
PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR PILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 11435
LENGTH: 1094
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US-10-156-761-8425
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                                                                                                                                                                                                                                                           Sequence 8425, Application US/10156761 Publication No. US20030119018A1 GENERAL INFORMATION:
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                 APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
CURRENT APPLICATION UNMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
                                                                                                                                                                      APPLICANT: OMURA, SATOSHI
APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
APPLICANT: HORIKAWA, HIRU
PRIOR APPLICATION NUMBER: JP 2001-204089
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           520 VPLTEAVDRL--AGLEKDPGWWRRLYDSLAGV------DPDRLS-GLPVPL---ADG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              460 PAEDPADWDAVAPVALRPRDAEVVEGAGADTVRVLAEVLPSLLPAGLERRVELRTLGVAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  126 PFAEPPDWDLV-----ESQLRTTVTADTVRI--DVIAD-----DMRPEL----AAA 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               294 TPQALVRVGLAP----EMEEPPPA 313
                                                                                                                                                                                                                                                                                                                                                                                                                  602 HPLLEKLGALPATPRÁVLTTPQVRAAVAASLDDEAPÁ 638
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                                                                                                                                                                        ISHIKAWA, JUN
HORIKAWA, HIROSHI
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HORIKAWA, HIROSHI
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US-10-156-761-8425
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PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 8425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 78; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 1354
TYPE: PRT
                                                                             551
                                                                                                                     209
                                                                                                                                                             500
                                                                                                                                                                                                   155
598 TRATDWGFSLWTLSVVDSTSAGTDL 622
                                                                                                                                                                                                                                         445 VIGDP---RVDTKLP--DLPDTSRAEVTIVVPVRNVGSASKRVTVTAAFDDVRVSRSVTV
                                                                                                                                                                                                                                                                                 112 LRADAILLRRIDRLPFAEPPDWDLVE-----SQLRTTVTA--DTVRID---VI 154
                                   260 LDATMAGLATCTLTHITELHASRDL 284
                                                                                                                                                                                                                                                                                                                         390 DKGPAGLAFVDAGAT-----MWNQNSPTYLAASGWDWMPAVRDRVSGIWNHVRLRSTGHA 444
                                                                                                                                                                                                                                                                                                                                                                                                         330 WLEFDGVNHTAEIWLNGQKVGGLTYPFARSSHDVTKMLAGNGEQALAVKITPMPFPGSPG 389
                                                                                                                                                                                                                                                                                                                                                               73 -----AMAAAGTTANVERFPNPNDPLHLASI--DFSPA--DFV-----TEGHR 111
                                                                                                                                                                                                                                                                                                                                                                                                                                             32 WIAED---HTVALFLDKDRV-----LYATDHSGREALLGCGAVLDHFRV------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     78;
                                                                             RRTTRFGIRQFGYEYTVPL-----PFGGSSDRYTQPVLLGVQKARYVRIKC-----L
                                                                                                                   RVT-----FGRDFPVVANTDRRPEFG--HDRSKVLVLSTYDNERASLLRCGEMLSAVL
                                                                                                                                                                                                   ADDMRPELAAASKLTESLRLYDSSYHAELFWWTGAFETSEGIP--HSSLVSAA----ESD 208
                                                                                                                                                           AGGESADVTFAPSTYAALRIRDPE-----LWWPNGY----GRPDLHDLTLTASIDGEESD
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24.0%;
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Pred. No. 6.7;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1354;
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550

499

72

Search completed: March 23, Job time: 70.6072 secs 06:28:13

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APPLICANT: NAGAHARI, KENJI
APPLICANT: MASUHO, YASUHIKO
TITILE OF INVENTION: NOVEL Tull length cDNA
TITLE OF REFERENCE: 084335-0191
CURRENT APPLICATION NUMBER: US/11/072,512
CURRENT FILING DATE: 2005-03-07
PRIOR APPLICATION NUMBER: US 60/350,978
PRIOR FILING DATE: 2002-01-25
PRIOR APPLICATION NUMBER: US 60/350,978
PRIOR APPLICATION NUMBER: JP 2001-379298
PRIOR APPLICATION NUMBER: JP 2001-379298
PRIOR APPLICATION NUMBER: JP 2001-379298
PRIOR FILING DATE: 2001-11-05
NUMBER OF SEQ ID NOS: 4096
SOFTWARE: PATENTU VET: 2.1
SEQ ID NO 3403
US-11-060-005-4
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US-11-072-512-3403
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                        RESULT 3
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                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 534
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                            / Match 5.5%; Score 95; DB 7, Local Similarity 25.2%; Pred. No. 0.44; Mismatches 41; Conservative 24; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6524 RHRDLASIDQVPDVLVLSCPPEADGGPAPEATSSALRRVLEVVREWLGDARYTDARLMVL 6583
                                                                                              201
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                                                                                                                                                                                       141 TGLKIGGDLTAAVTKTVGTALSSSGMTSIATNSVPPVSSAAPKPTSWAAIARKPAKPQPK 200
                                                                                                                                                                                                                                                                                                                                  187 TGAFETSEGIPHSSLVSAAESDRVTFGRDFPVVANTDRRPEFGHDR-SKVLVLSTYDNER 245
                                                                                                                                                                                                                                      246 ASLLRCGEMLSAV-----LLDATMAGLATCTLTHITELHASRDLVAALIGQPATPQAL 298
                                                                                                                                                                                                                                                                                     97
                                                                                              LKPKGNVGIGGSAVPPPPIKHNMNIGTWDEKGSVVKAPPTQPV 243
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                                                                                                                                                                                                                                                                                     SSAYSSSYGYPPSSL-----
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                                                                                                                                        VR----ATPRRPI 319
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YOSHIKAWA, TSUTOMU
OTSUKA, MOTOYUKI
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IRIE, RYOTARO
TAMECHIKA, ICHIRO
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YAMAMOTO, JUN-ICHI
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SATO, HIROYUKI
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                                                                                                                                                                                                                                                                                                                                                                               52; Indels
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                                                           APPLICANT: Irwin H. Gelman
TITLE OF INVENTION: TUMOR SUPPRESSOR GENE
FILE REFERENCE: A30558-A-FWC-A-A 070156.059
CCURRENT APPLICATION NUMBER: US/11/060,005
CURRENT APPLICATION NUMBER: 09/902,432
PRIOR APPLICATION NUMBER: 09/902,432
PRIOR APPLICATION NUMBER: 08/978,277
PRIOR APPLICATION NUMBER: 08/978,277
PRIOR APPLICATION NUMBER: 08/65,401
PRIOR FILING DATE: 1997-11-25
PRIOR APPLICATION NUMBER: 08/65,401
PRIOR FILING DATE: 1996-06-18
PRIOR APPLICATION NUMBER: 08/635,121
PRIOR APPLICATION NUMBER: 08/635,121
PRIOR APPLICATION NUMBER: 08/635,121
PRIOR FILING DATE: 1996-04-19
NUMBER OF EGO ID NOS: 35
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 2
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Publication No. US20050260693A1
GENERAL INFORMATION:
TOTAL STATEMENT APPLICANT: Irwin H. Gelman
TITLE OF INVENTION: TUMOR SUPPRESSOR GENE
FILE REFERENCE: A30558-A-FWC-A-A 070156.0597
CURRENT APPLICATION NUMBER: US/11/060,005
CURRENT FILING DATE: 2005-02-17
PRIOR APPLICATION NUMBER: 09/902.432
PRIOR FILING DATE: 2001-07-10
PRIOR APPLICATION NUMBER: 08/978,277
PRIOR APPLICATION NUMBER: 08/978,277
PRIOR APPLICATION NUMBER: 08/65,401
PRIOR FILING DATE: 1996-06-18
PRIOR FILING DATE: 1996-06-18
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                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 2, Application US/11060005 Publication No. US20050260693A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: FastSEQ for Windows Version SEQ ID NO 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR FILING DATE: 1996-04-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: PRT
  ORGANISM: Rattus norvegicus
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                                            LENGTH: 1346
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es 62; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 167 KLTESLRLYDSSYHAELFWWTGAFETSEGIPHSSLVSAAESDRVTFGRDFPVVANTDR--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             119 LRRIDRLPFAEPPDWDLVESQ------LRTTVTADTVRIDVI-----ADDMRPELAAAS 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            875 AVIDGTR-----AVTSVEERSPSWISASVTEPLEHTAGEAMPPVBEVTEKDIIAEETPV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----RPEFGHDRSKVLVLSTYDNERASLLRCGEMLSA---VLLDATMAGLATCTLTHIT 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QLTDSPDTTEEATPVQEV-ESGVLDTEEEERQTQAILQAVADKVKEESQVPATQTVQRTG 1045
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LTQT--LPEGKDAHDDMVTSEVDFTSEAVTATETSEALRTEEVTEASGAEETTDMVSAVS
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Pred. No. 5.
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Result
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Maximum Match 100%
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re greater than or equal to the score of the result being printed,
is derived by analysis of the total score distribution.

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2: /cgn2 6/ptodata/1/pubpaa/US07

3: /cgn2 6/ptodata/1/pubpaa/US07

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6: /cgn2 6/ptodata/1/pubpaa/US10]

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/cgn2_6/ptodata/1/pubpaa/USO6_NEW_PUB.pep:*
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 GenCore version 5.1.7 (c) 1993 - 2006 Biocceleration
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US-11-060-005-2
US-11-192-967-6
US-11-193-715-6
US-11-196-568A-9021
US-11-096-568A-9020
US-11-096-568A-30285
US-11-096-568A-30285
US-11-096-568A-30285
US-11-096-568A-30285
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US-11-096-568A-30285
US-11-096-568A-30285
US-11-096-568A-17585
US-11-096-568A-17769
US-11-096-568A-17769
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US-11-072-512-3403
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 10103, A
396, App
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17585, A
396, App
28488, A
7348, Ap
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9021, Ap
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9023, Ap
30286, A
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93403, Ap
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| 75.5               | 75.5              | 76                   | 76                 | 76                  | 76               | 76               | 76                  | 76               | 76                  | 76                 | 76.5             | 76.5             | 76.5             | 76.5               | 76.5               | 77                   | 77                   | 77                   | ,                                   |
| 4.4                | 4.4               | 4.4                  | 4.4                | 4.4                 | 4.4              | 4.4              | 4.4                 | 4.4              | 4.4                 | 4.4                | 5                | 5                | 4.5              | 4.5                | 5                  | 4.5                  | 5                    | 5                    |                                     |
| 765                | 697               | 673                  | 523                | 464                 | 436              | 431              | 430                 | 419              | 412                 | 351                | 1250             | 1075             | 937              | 510                | 303                | 2535                 | 2433                 | 2362                 | F 1 6 1                             |
| 7                  | 7                 | 7                    | 7                  | 7                   | 7                | 9                | 7                   | 7                | 7                   | 7                  | 7                | 7                | 7                | 7                  | 7                  | 7                    | 7                    | 7                    | c                                   |
| US-11-087-099-7957 | US-11-074-176-214 | US-11-096-568A-19860 | US-11-087-099-8632 | US-11-096-568A-5866 | US-11-174-150-39 | US-10-525-674-26 | US-11-096-568A-5867 | US-11-174-150-40 | US-11-096-568A-5868 | US-11-072-512-3529 | US-11-137-465-62 | US-11-100-640-12 | US-11-017-550-66 | US-11-087-099-8796 | US-11-087-099-9698 | US-11-096-568A-31776 | US-11-096-568A-31777 | US-11-096-568A-31778 | CO - EC - CE CE - CE - CE - CE - CE |
| Sequence           | Sequence          | Sequence             | Seguence           | Sequence            | Sequence         | Sequence         | Sequence            | Sequence         | Sequence            | Sequence           | Sequence         | Sequence         | Sequence         | Sequence           | Sequence           | Sequence             | Sequence             | Sequence             | 0040000                             |
| 7957, Ap           | 214, App          | 19860, A             | 8632, Ap           | 5866, Ap            | 39, Appl         | 26, Appl         | 5867, Ap            | 40, Appl         | 5868, Ap            | 3529, Ap           |                  | 12, Appl         |                  | 8796, Ap           | 9698, Ap           | 31776, A             | 31777, A             | 31778, A             | Ad                                  |

### ALIGNMENTS

RESULT 1 US-11-143-980-48

Sequence 48, Application US/11143980 Publication No. US20050272133A1 GENERAL INFORMATION:

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APPLICANT: Wagenaar, Melissa M.
APPLICANT: Wagenaar, Melissa M.
APPLICANT: Summers, Mia
APPLICANT: Summers, Mia
APPLICANT: Kulowski, Kerry
APPLICANT: Pong, Kevin
TITLE OF INVENTION: Biosynthetic Gene Cluster for the Production of a Complex
TITLE OF INVENTION: Biosynthetic Gene Cluster for the Production of a Complex
TITLE REPERSICE: AM-101426US
CURRENT APPLICATION NUMBER: US/11/143,980
CURRENT FILING DATE: 2005-06-03
PRIOR APPLICATION NUMBER: US 60/664,483
PRIOR APPLICATION NUMBER: US 60/664,483
PRIOR APPLICATION NUMBER: US 60/576,895
PRIOR FILING DATE: 2004-06-03
NUMBER OF ESG ID NOS: 72
SOFTWARE: Patentin version 3.3
SQ ID NO 48
LENGTH: 7100
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APPLICANT: Hucul, John
APPLICANT: Haltli, Bradley A.
APPLICANT: Wagenaar, Melissa M.
APPLICANT: Graziani, Edmund
APPLICANT: Summers, Mia
APPLICANT: Kulowski, Kerry
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                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 7102
TYPE: PRT
ORGANISM: Streptomyces
                                                                                                                                                         6404
                                                                  6464 EQRILEAGGSRGDALFRIEWKELFVPTGATGPRAQSWGILGGHDEPRITAALTAAGVSPQ 6523
                                                                                                                                                                                                                                           6359 WIRDSE---VFLD-----VALPEQVRGDAARCGVHPALLD---AALQGIGLGA----FVN
121
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                                                                                                                                                                                                                                                                                 32 WIAEDHTVALFLDKDRVLYATDHSGREALLGCG---AVLDHFRVAMAAAGTTANVERFPN
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RESULT 5
US-11-192-967-6
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SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 6
LENGTH: 1734
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                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 4.9%; Score 84.5; DB 7; Best Local Similarity 21.5%; Pred. No. 23; Matches 53; Conservative 30; Mismatches 97;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
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ORGANISM: Spodoptera frugiperda
-11-192-967-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Flannagan, Ronald D.
APPLICANT: Mathis, John P.
APPLICANT: Meyer, Terry E.
APPLICANT: Meyer, Terry E.
TITLE OF INVENTION: Novel Bt Toxin Receptors From
TITLE OF INVENTION: Lepidopteran Insects and Meth
FILE REFERENCE: 35718/204664
CURRENT APPLICATION NUMBER: US/11/192,967
CURRENT FILING DATE: 2005-07-29
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PRIOR FILING DATE: 2000-11-17
PRIOR APPLICATION NUMBER: 60/166,285
PRIOR FILING DATE: 1999-11-18
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         275 ITELHASRDLVAALIGQPATPQALVRVGLAPEMEE 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  542 LTQT--LPEGKDAHDDMVTSEVDFTSEAVTATETSEALRTEEVTEASGAEETTDMVSAVS
323
                                                                                                                               748
                                                                                                                                                                          231
                                                                                                                                                                                                                                                                                                                                                     145 TADTVRIDVIADDMRPELAAASKLTESLRLYDSSYHAELFW---WTGAPETSEGI--PHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      167 KLTESLRLYDSSYHAELFWWT--GAFETSEGIPHSSLVSAAESDRVTFGRDFPVVANTDR 224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              119 LRRTDRLPFAEPPDWDLVESQ------LRTTVTADTVRIDVI-----ADDMRPELAAAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          488 ÁVIDGTR-----AVTSVEERSPSWISASVTEPLEHTAGEAMPPVBEVTEKDIIAEETPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            65 AVLDHFRVAMAAAGTTANVERFP-----NPNDPL-HLASIDFSPADFVTEGHRLRADAIL 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    64.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QLTDS---PDTTEEATPVQEVEGGVLDTEEEERQTQAILQAVADKVKEESQVPATQTVQR
  FHVRAKD 329
                                           TMVPIKD--TPDDLIAI---NYVTGQLTVNKGQAIDADDPPRFYLYYKVTASDKCSLDEF 862
                                                                                   TLTHITELHASRDLVAALIGQPATPQALVRVGLAPEMEEPP-----PATPRRPIDEV 322
                                                                                                                                 DYDEAMLTVTIIDMNDNWPIWADNTLQQTLRVREMADEGVIVGTLLATDLDGPLYNRVRY 807
                                                                                                                                                                             DRSKVLVLSTY-----
                                                                                                                                                                                                                         ADYHGCVEILTVY PDPDNHGRAEGHLVAREVSDGVTIDYEKFEVLYLVVRVIDRNTVIGP
                                                                                                                                                                                                                                                                                                            TPPILRLPRSSPSVEENVEVGHPITEGLTATUPDTTADLHFEIDWDNSYATKQGTNGPNT
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                                                                                                                                                                                                                                                                -----LVSAAESDRVTFGRD-----FPVVANTDRRPEFGH 230
                                                                                                                                                                          DNERASLLRCGEM-----LSAVLLDATMAGLATC
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                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1734;
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CURRENT FILING DATE: 2005-07-29
PRIOR APPLICATION NUMBER: US/09/715,909
PRIOR FILING DATE: 2000-11-17
PRIOR APPLICATION NUMBER: 60/166,285
PRIOR FILING DATE: 1999-11-18
NUMBER OF SEQ ID NOS: 11
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 6
SEQ ID NO 6
LENGTH: 1734
TYPE: PRT
ORGANISM: Spodoptera frugiperda
US-11-193-715-6
                                                                                                                        Sequence 9021, Application US/11096568A

Publication No. US20060048240A1

GENERAL INFORMATION:
APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence-Determined DNA I
TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
1.ENCTURE OF SEQ ID NOS: 34471
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US-11-096-568A-9021
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US-11-193-715-6
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APPLICANT: Flamnagan, Ronald D.
APPLICANT: Mathis, John P.
APPLICANT: Meyer, Terry E.
APPLICANT: Meyer, Terry E.
APPLICANT: Nevel Bt Toxin Receptors From
TITLE OF INVENTION: Lepidopteran Insects and Methods of Use
FILE REFERENCE: 35718/204664
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Best Local Similarity
Matches 53; Conserv
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                                                                                          LENGTH: 32
TYPE: PRT
  FEATURE:
NAME/KEY: misc_feature
LOCATION: (1)..(324)
                                                                   ORGANISM: Triticum aestivum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    628 TPPILRLPRSSPSVEENVEVGHPITEGLTATDPDTTADLHFEIDWDNSYATKQGTNGPNT
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                                                                                                              324
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TMVPIKD---TPDDLIAI----NYVTGQLTVNKGQAIDADDPPRFYLYYKVTASDKCSLDEF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4.9%; Score 84.5; liarity 21.5%; Pred. No. 23; Conservative 30; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30; Mismatches
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                                                                                                                                                                                                                                                                         DNA Fragments and Corresponding Polypeptides
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Gaps

687

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Sequence 9020, Application US/11096568A

Publication No. US20060048240A1

GENERAL INFORMATION:
APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence-Determined DNA Fra
TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION UMMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
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; LOCATION: (1)..(358)
; OTHER INFORMATION: Ceres Seq. ID no. 13657648
US-11-096-568A-9020
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US-11-096-568A-9020
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQ ID NO 9020
LENGTH: 358
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Triticum aestivum
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                                                                      193
                                                                                                                                               144
                                                                                                           180 HAELFWWTGAFETSEGIPHSSLVSAAESDRVTFGRDFPVVANTDRRPEFGHDRSKVLVL- 238
                                  239 ---STYDNERASLLRCGEMLSAVLLDATMAGLATCTLTHITEL
                                                                                                                                                                                  120 RRTDRLPFAEPDWDLVESQLRTTVTADTVRIDVIADDMRPELAAASKLTESLRLYDSSY 179
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AACSFLDAQAAEL----EIEAYPLLDELTSKISTLNLKRVRRL
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                                                                      -QRRLLQRAEGDELPF---
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Pred. No. 2.4;
8; Mismatches 107; Indels
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                                                                                                                                                                                                                                                           -----ASIDFSPADFVTEGHRLRADAILL 119
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                                                                        -RALELALE 221
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                                                                                                                                                                              APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence-Determined DNA :
TITLE OF INVENTION: Sequence-Determined DNA :
TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 30287
LENGTH: 1264
                                                     ; NAME/KEY: misc_feature
; LOCATION: (1).-(1264)
; OTHER INFORMATION: Ceres
US-11-096-568A-30287
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; OTHER INFORMATION: Ceres Seq.
US-11-096-568A-9023
                                                                                                                                                                                                                                                                                                                                                                                                            US-11-096-568A-30287
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US-11-096-568A-9023
                                                                                                                                                                                                                                                                                                                                                 Sequence 30287, Application US/11096568A Publication No. US20060048240A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 9023, Application US/11096568A

Publication No. US20060048240A1

GENERAL INFORMATION:

APPLICANT: Alexandrov, Nickolai et al.

TITLE OF INVENTION: Sequence-Determined DNA Fragments and Corresponding Polypeptides i
TITLE OF INVENTION: Therby

TITLE OF INVENTION: Therby
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CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 9023
                   Query Match
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Best Local Similarity
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NAME/KEY: misc_feature
LOCATION: (1)..(445)
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TYPE: PRT
ORGANISM: Triticum aestivum
                                                                                                                              FEATURE:
                                                                                                                                               ORGANISM: Arabidopsis thaliana
                                                                                                                                                                    TYPE: PRT
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mes 66; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ---STYDNERASLLRCGEMLSAVLLDATMAGLATCTLTHITEL
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4.7%;
                                                                      Seq.
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Pred. No. 3.8;
28; Mismatches
Score
Pred.
                                                                        ID no. 4952354
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 No. 29;
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                   7;
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                 Length 1264;
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                                                                                                                                                                                                                                                                                                                  and Corresponding Polypeptides F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     226
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ---EF---RALELALE 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ---LLLNSLDSYVFQY 158
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Gaps

13

49

238

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The present sequence represents an alkyl hydroperoxide reductase subunit CC protein, which confers on Mycobacterium tuberculosis resistance against CC antimicrobial reactive nitrogen intermediates. The protein is used in a CC method for screening therapeutics for their ability to sensitise bacteria CC comprises preparing recombinant host cells lacking endogenous alkyl CC phydroperoxide reductase subunit C protein encoding genes, placing cells in growth medium containing reactive nitrogen intermediates and a test CC compound, and determining if the cells survive. The alkyl hydroperoxide reductase subunit C polypeptides can confer resistance to reactive nitrogen intermediates, e.g. nitric oxide, nitrite, nitrosonium, S-CC nitrogen intermediates, e.g. nitric oxide, nitrite, nitrosonium, S-CC nitrogen intermediates, e.g. nitric oxide, nitrite, nitrosonium, S-CC nitrogen intermediates can be used to identify agents that inhibit the CC reactive nitrogen intermediate-resistance mechanisms of pathogens. The CC cinhibit production of reactive nitrogen intermediates in the treatment of conhibit production of reactive nitrogen intermediates in the treatment of
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                                                                                                                                                                                                                                                                           Claim 40; Page 16-17;
                                                                                                                                                                                                                                                                                                            Novel
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                                                                                                                                                                                                                                                                                                                                                                                          Nathan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               antimicrobial reactive nitrogen intermediate; antibacterial;
nitric oxide; nitrite; nitrosonium; S-nitrosothiol; nitrogen dioxide;
dinitrogen trioxide; dinitrogen tetraoxide; septic hypotension; strok
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A alkyl hydroperoxide reductase subunit C protein.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mycobacterium tuberculosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  infection; vaccine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hydroperoxide
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                                                                                                       The present sequence is that of the Mycobacterium tuberculosis (Mtb) strain H37Rv cytosolic Rv2428 gene product, designated AphC2. This is one of 31 immunodominant secreted or cytosolic Mtb proteins of strain H37Rv (see AAM50729-59) discovered through the use of 2-dimensional liquid phase electrophoresis coupled with an in vitro interferon-gamma assay and
                                                                                                                                                                                                                                                                                                                                                            Vaccine
life in
liquid chromatography-mass spectrometry. The immunogens stimulate a strong interferon-gamma response from T cells of M. tuberculosis infected mice. The invention provides vaccine compositions for boosting immunity to mycobacteria when administered in mid-life to a subject who has been
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              e.g. septic hypotension, stroke or infections. The alkyl hydroperoxide reductase subunit C protein or DNA can be used for vaccinating mammals against infection by M. tuberculosis. The antibodies against the protecan be used for passively immunising mammals infected with M. tuberculosis. These products can also be used for detection of M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mycobacterium tuberculosis
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                                                                                                                                                                                                                                                                                                                                for boosting immunity to mycobacteria when administered a subject who has been vaccinated in childhood with Bace-Guerrin, has purified proteins from mycobacterium tube
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 GenCore version 5.1.7 (c) 1993 - 2006 Biocceleration
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Abu25828 Protein e
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16-OCT-2003 19-SEP-1996 AAR98369;

(revised) (first entry)

AAR98369 standard; protein; 195

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| 45        | 44        | 43        | 42        | 41       | 40        | 39        | 38        | 37        | 36        | 35        | 34        | IJ<br>IJ  | 32        | 31        | 30        | 29       | 28        | 27        | 26       | 25       |
|-----------|-----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|----------|----------|
| •         | •         | •         | •         | •        |           | 350.5     | 350.5     |           | 350.5     | ٠         | 350.5     | •         | ٠         |           | ٠         | •        | 350.5     | ٠         | ٠        | •        |
| •         | •         | ٠         | •         | •        |           | •         | 34.2      |           | •         |           | •         | •         |           |           |           | •        |           |           | ٠        |          |
| 1641      | 1641      | 1464      | 1464      | 1464     | 1427      | 1427      | 1427      | 982       | 982       | 982       | 955       | 930       | 930       | 926       | 446       | 328      | 321       | 290       | 283      | 282      |
| ហ         | v         | 7         | 7         | σ        | 7         | σ         | u         | 7         | ഗ         | Ų.        | 7         | 7         | ഗ         | 7         | σ         | ហ        | տ         | U         | ຫ        | v        |
| AAB71310  | AAU71856  | ADG26981  | ADB14458  | ABR54576 | ADB78860  | AAB71311  | AAU71857  | ADB78858  | AAB71309  | AAU71855  | ADB78890  | ADA26364  | AAE29731  | ADB78891  | ABP55386  | AAE29726 | AAE29728  | AAE29725  | AAE29727 | AAE29736 |
| Aab71310  | Aau71856  | Adg26981  | Adb14458  | Abr54576 | Adb78860  | Aab71311  | Aau71857  | Adb78858  | Aab71309  | Aau71855  | Adb78890  | Ada26364  | Aae29731  | Adb78891  | Abp55386  | Aae29726 | Aae29728  | Aae29725  | Aae29727 | Aae29736 |
| MAPSIA-MI | Leishmani | Human pro | Expressio | Prostate | Leishmani | MAPSIA-MI | Leishmani | Leishmani | MAPSIA-MI | Leishmani | Leishmani | Mycobacte | Mycobacte | Leishmani | Human col |          | Leishmani | Leighmani |          |          |

# ALIGNMENTS

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The aphCF operon (AAT31461) of isoniazid (INF)-resistant Mycobacterium bovis ATCC encodes polypeptides AhpC (AAR98369) and AhpF (AAR98370), which likely combine to form an active alkyl hydroperoxide reductase that may be either a direct target for INH or acts to confer INH resistance. Isolated AhpC and/or AhpF polypeptides can be prepd. e.g. in mammallan or yeast systems. They are useful for drug screening, in immunoassays and in vaccine prodn. (Updated on 16-OCT-2003 to standardise OS field)
Sequence 195 AA;
                                                                                                                                                Example 2; Fig 2; 55pp; English.
                                                                                                                                                                               Polynucleotide(s) derived from the mycobacteria ahpCF operon - useful in diagnosis and treatment of mycobacterial diseases.
                                                                                                                                                                                                                            N-PSDB; AAT31461.
                                                                                                                                                                                                                                          WPI; 1996-309592/31.
                                                                                                                                                                                                                                                                        Collins DM,
                                                                                                                                                                                                                                                                                                                                   20-DEC-1994;
                                                                                                                                                                                                                                                                                                                                                             20-DEC-1995;
                                                                                                                                                                                                                                                                                                                                                                                           27-JUN-1996.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mycobacterium bovis; strain ATCC 35729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ahpCF operon; AhpC; AhpF; alkyl hydroperoxide
antibiotic resistance; mycobacteria; therapy;
                                                                                                                                                                                                                                                                                                     (NZPA-) NEW ZEALAND PASTORAL AGRIC RES INST LTD
                                                                                                                                                                                                                                                                        Wilson T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AhpC polypeptide.
                                                                                                                                                                                                                                                                                                                                   94NZ-00270222.
                                                                                                                                                                                                                                                                                                                                                               95WO-NZ000133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                operoxide reductase; isoniazid; therapy; diagnosis; vaccine.
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ADS28683 ADS42506 ADS29794 AEA00256

Bacterial Bacterial Bacterial Leishmani

Query Match

100.0%;

Score

1024;

몂 2

Length 195;

ADM48264 ADN20134

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US-10-330-773-519
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US-10-330-773-519
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: David W. Morris
APPLICANT: Marc Malandro
TITLE OF INVENTION: Novel Compositions and Methods in Cancer
FILE REFERENCE: 529452001300
CURRENT FILING DATE: 2002-12-27
RUMBER OF SEQ ID NOS: 981
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 519
LENGTH: 519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 519, Application US/10330773 Publication No. US20060040262A1
                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 4.7%; Score 81; DB 6; Length 519; Best Local Similarity 20.5%; Pred. No. 9.2; Matches 53; Conservative 27; Mismatches 77; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
  367
                                        192
                                                                               308
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                                                                                                                                                                                                     118 LIRRIDRLPFAEPPDWDLVESQLRTTVTADTVR-IDVIADD------MRPELAAASK 167
                                                                                                                                                                                                                                                                                                                               166 DIIISVIENMKCNLP--NQQQPERWDTEDASRLRGTGAEMTFYTHIKQEPGSSASSHTGC 223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        227 ----EFGHDRSKVL--VLSTYDNERASLLRCG-----EMLSAVLLDATMAGLATCTL 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  168 LTESLRLY-----
                                                                                                                                                                                                                                               224 E---GCAA-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                290 ----LYAV--LVSALV 299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               236 SENDEWTQDRAKPVTQIVSAEAWGRAD----CGFTSESYQQGVLSATILYEILLGKAT---
                                                                                                                                                                                                                                                                                      58 EALLGCGAVLDHFRVAMAAAGTTANVERFPNPNDPLHLASIDFSPADFVTEGHRLRADAI 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13 SAVQLACRAPSLHNSQPWRWIAEDHTVALFLDKDRVLYATDHSGREALLGCGAVLDHFRV 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  69;
                                                                                                                                                                                                                                                                                                                                                      9 DVIKSAVQ-LACRAPSLHNSQPWRWIAEDHTVALFLDKDRVLY------ATDHSGR 57 | : | | : | : | : | : | : | : |
                                      TSEGIPHSSLVSAAESDRV 210
                                                                               YCEYLGKYFCASCHSSAESCIPARILTMWDFRKYQVSDFSKWLLDSVWHQPVFKLLGGH-
                                                                                                                                                            MLK--SRVPGTE--DWVLPRCQIILTVHPPIKRDIAVVAQNFFCAGCGTPIQPKFVKRLR 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      THITELHASRDLVAALI 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FWWTGAFETSEGI---PHSSLVSAAESD-RVTFGRDFPVVANTDRRP-------
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AMAAAGTTANVERFPNPND-PLHLASIDFSPAD-----FVTEGHRLRADAILLRRTDRLP 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TSVKIECRSLDFQATTMF-WYRQ-----FPKQSLMLMATSNEGSKATYEQGVEKDKFLI
  -----HSLYAKAKELDRV 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4.7%; Score 81; DB 7; Length 311; ilarity 21.8%; Pred. No. 4.5; Conservative 42; Mismatches 118; Indels
                                                                                                                                                                                                                                           -----LQVGDEEYAEEDFDSSVDAAR--EV
                                                                                                                                                                                                                                                                                                                                                                                                                Indels 102;
                                                                                                                       -DSSYHAELFWWTGAFE 191
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APPLICANT: MACALLISTER, THOMAS

APPLICANT: MACALLISTER, THOMAS

ITITLE OF INVENTION: CLONING, OVEREXPRESSION AND THERAPEUTIC USE OF

TITLE OF INVENTION: BIOACTIVE HISTIDINE AMMONIA LYASE

FILE REFERENCE: 078728/0106

CURRENT APPLICATION NUMBER: US/11/135,667

CURRENT FILING DATE: 2005-05-24

PRIOR APPLICATION NUMBER: US/99/833,745

PRIOR APPLICATION NUMBER: 005/99/833,745

PRIOR APPLICATION NUMBER: 601197,770

PRIOR FILING DATE: 2000-04-14

NUMBER OF SEQ ID NOS: 66

SOFTWARE: Patentin Ver. 2.1

SEQ ID NO 64

LENGTH: 513
Search completed: March 23, Job time: 8.94316 secs
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US-11-135-667-64
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Publication No. US20060034817A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: ROBERTS, JOSEPH APPLICANT: SETHURAMAN, NA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                 500
                                                                                                                                                              450
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                                                                                                                     301 VGLAPE 306
                                                                                                                                                                                                      251
                                                                                                                                                                                                                                                                                        200 SLVSAAESDRVTFGRDFPVVANTDRRPEFGHDRSKVLVLSTYD----NERASL-----LR 250
                                                                                                                                                                                                                                                                                                                                                                       143 TVTADTVRIDVIADDMRPELAAASKLTESLRLYDSSYHAELFWWTGAFETSEGIP---HS 199
                                                                                                                                                                                                                                                                                                                                                                                                               332 GNFHGEVLALRLGYAASALAELAAISERRTDRLLNPETQEPLEPFLAP-----DSGLHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               285 AYSIRCLPQVHGAVRDALDHLRAAVATELNSAT-----DNPL-----VFPSGTVVSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              229 LTTEVTMSTT--ASCAPAIH--EPVRPHDGQAVSARHIRNLTAGSEVLDHHRDCDGRVQD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   58 EALLGC-----GAV----LDHFRVAMAAAGTTANVERFPNPNDPLHLASIDFSPADFVTEG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6 VTTDVIKSAVQLACRAPSLHNSQPWR-----WIAEDHTVALFLDKDRVLYATDHSGR---
                                                                               AGLVED 505
                                                                                                                                                                                                    CGEMLSAVLLDATMAGLATCTLTHITELHASRDLVAALIGQPATPQA------LVR 300
                                                                                                                                                                                                                                                 ASVSGAQEDHVSMSAG-----
                                                                                                                                                                                                                                                                                                                                GL------MIPQYTAAS-LVNDLR-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                    HRLRADAILL-------RRTDRL-----PFAEPPDWDLVESQLRT 142
                                                                                                                                                              CGAQ-GREFLDPLALGAGTA---
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.7%; Score 80; DB 7;
22.1%; Pred. No. 11;
ative 36; Mismatches 9
                 2006, 06:29:36
                                                                                                                                                                -AAYDLVRSEVSEPAGDRALADDMAAVGDLVR
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                                                                                                                                                                                                                                                 -AAYNFREAVEKAATVVGVELL
                                                                                                                                                                                                                                                                                                                                  ----SLGQPATLDN
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Matches

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RESULT 11

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RESULT 12
US-11-096-568A-30285
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Sequence 30285, Application US/11096568A

Publication No. US20060048240A1

GENERAL INFORMATION:
APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence-Determined DNA Fragments and Corresponding Polypeptides
TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION NUMBER: US/11/096,568A

CURRENT FILING DATE: 2005-04-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/11/096,568A CURRENT FILING DATE: 2005-04-01 NUMBER OF SEQ ID NOS: 34471 SEQ ID NO 30286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
APPLICANT: Alexandrov, Nickolai et al.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 30286, Application US/11096568A Publication No. US20060048240A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: Sequence-Determined DNA TITLE OF INVENTION: Therby FILE REFERENCE: 2750-1592PUS2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc_feature
LOCATION: (1)...(1301)
OTHER INFORMATION: Ceres Seq. ID no. 4952353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 1301
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM: Arabidopsis thaliana FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                     687 PPPPPM 692
                                                                                                                                                                                                                                                                                                                              314 TPRRPI 319
                                                                                                                                                                                                                                                                                                                                                                       635 SKTVSVDF----FGAATSPHL----GASDNVASNLGQPARSPPPISNSDKKPALPRPPPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                        586 TVPN----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      532 VRPQLAQAGAPPPPPPLPAAASKPSEQLQ-----HSVVQATEPLSQGNSWMSLAGSTFQ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         598 SKTVSVDF----FGAATSPHL----GASDNVASNLGQPARSPPPISNSDKKPALPRPPPP 649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           549 TVPN-----EKNLITLPPTPPLASTSHASPEPSSKTTNSLLLS----PQASPATPTNP
                                                                                                                                                                                                                                                                                                                                                                                                           255 LSAVLLDATMAGLATCTLTHITELHASRDLVAALIGQPA-TPQALVRVGLAPEMEEPPPA 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             195 GIPHSSLVSAAESDRVTFGRDFPVVANTDRRPEFGHDRSKVLVLSTYDNERASLLRCGEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              158 MRPEL-----FWWTGAFETSE 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       43; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          43;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.7%; Score 81.5;
23.1%; Pred. No. 30
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                 ; ORGANISM: Homo sapiens US-11-000-463-345
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US-11-000-463-345
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                                                                         SOFTWARE: FAB
SEQ ID NO 345
LENGTH: 311
                                                                                                                                                                                                                                                             PRIOR APPLICATION NUMBER: 10/291,265
PRIOR FILING DATE: 2002-11-08
PRIOR APPLICATION NUMBER: PCT/US01/02623
PRIOR FILING DATE: 2001-01-25
PRIOR APPLICATION NUMBER: 09/922,279
PRIOR APPLICATION NUMBER: 09/922,279
PRIOR FILING DATE: 2001-08-03
PRIOR APPLICATION NUMBER: 09/617,746
PRIOR APPLICATION NUMBER: 09/617,746
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LENGTH: 1307
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Best Local Similarity
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                                                                                                                                                          PRIOR FILING DATE: 2000-07-17
PRIOR APPLICATION NUMBER: 09/631,451
PRIOR FILING DATE: 2000-08-03
PRIOR APPLICATION NUMBER: 09/633,870
PRIOR FILING DATE: 2000-09-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Drmanac, Radoje T.
TITLE OF INVENTION: Novel Nucleic Acids and
FILE REFERENCE: 785CIP4CN
CURRENT APPLICATION NUMBER: US/11/000,463
CURRENT FILING DATE: 2004-11-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                     PRIOR FILING DATE: 2000-09-15
NUMBER OF SEQ ID NOS: 944
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APPLICANT: Liu, Chenghua
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LOCATION: (1)..(1307)
OTHER INFORMATION: Ceres Seq. ID no. 4952352
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ORGANISM: Arabidopsis thaliana
FEATURE:
                                                            TYPE: PRT
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Cao, Yi-Cheng
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wang, Zhiwei
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Xiaohong
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27; Mismatches
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Best Local
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06-SEP-2001; 2001US-00948993.
25-OCT-2001; 2001US-0342923P.
08-FEB-2002; 2002US-00072851.
06-MAR-2002; 2002US-0362699P.
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              Of the
                                                                                                                                                                                                                                                                                                                                    21-MAR-2002;
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                                                                                                                                                                                                                                                                                                                                                                                                               Mycobacterium bovis
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                Protein encoded by Prokaryotic essential gene #20345.
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          e invention relates to an isolated nucleic acid comprising any one of 6213 antisense sequences given in the specification where expression the nucleic acid inhibits proliferation of a cell. Also included are:

) a vector comprising a promoter operably linked to the nucleic acid
                                                                                                  antisense nucleic acids, useful for identifying proteins or screening homologous nucleic acids required for cellular proliferation to late candidate molecules for rational drug discovery programs.
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ctor comprising a promoter operably linked to the name a polypeptide whose expression is inhibited by the
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Trawick JD,
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Yamamoto R,
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Forsyth
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Best Local S
Matches 195
21-MAR-2001;
06-SEP-2001;
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                                                                         21-MAR-2002;
                                                                                                                                                                              Mycobacterium tuberculosis
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Pred. No. 1.2e-108;
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                                                                                                                                                                                                                                                                                                                                                                                                                            cc encoding a polypeptide whose expression is inhibited by the antisense councies acid; (2) a host cell containing the vector; (3) an isolated compound that inhibited by the antisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular cc proliferation; (7) identifying a compound that inhibited by the critically produced for proliferation, or that has an activity against a biological pathway crequired for proliferation, or that inhibits cellular proliferation; (8) identifying a gene required for cellular proliferation of the biological pathway in which a proliferation-required gene or its gene product lies or a gene on which the test compound that inhibits proliferation of an occupants acts; (9) manufacturing an antibiotic; (10) profiling a compound's activity; (11) a culture comprising strains in which the gene product lies or compound's activity; (11) a culture comprising strains in which the gene conduct is overexpressed or underexpressed; (12) determining the extent to which each of the strains is present in a culture or collection of compound's activity ing the target of a compound that inhibits the proliferation of an organism. The antisense mucleic acids are useful for identifying proteins or screening for homologous nucleic acids required for proliferation to isolate candidate molecules for rational contract of the target prokaryotic essential genes. Note: The sequence data for this charget prokaryotic essential genes. Note: The sequence data for this contract of the propersion of the printed specification but was obtained.
                                                                                                                                                                                                                                                                                                                                                              Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 195
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06-MAR-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          isolate candidate molecules for rational drug discovery programs
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the 6213 antisense sequences given in the specification where expression of the nucleic acid inhibits proliferation of a cell. Also included are:
(1) a vector comprising a promoter operably linked to the nucleic acid
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GDPTLDAGELLKASA 195
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                                                                                  AAGVLNADGVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQSDELCACNWRK 180
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Pred. No. 1.2e-108;
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                                                                                                                                                                                                                                                                                                                                                                   The present invention describes polypeptides or their fragments, which CC are expressed during the latent stage of a mycobacterial infection. CC and/or nucleic acids encoding the polypeptides, which are useful for Creating a therapeutic vaccine against tuberculosis. Also described: (1) a therapeutic vaccine against tuberculosis comprising one or more CC polypeptides; (2) a method for treating an animal, including a human being, with tuberculosis caused by virulent mycobacteria, e.g. by CC Mycobacterium tuberculosis, M. africanum or M. bovis; (3) a method for CI immunising an animal, including a human being, against tuberculosis CC caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis CC caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis CC caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis CC (5) a method for diagnosing previous or ongoing infection with a virulent mycobacterium; and (6) a method of diagnosing Mycobacterium tuberculosis CC infection in a subject. The polypeptides have antibacterial activities, and can be used in vaccines and in gene therapy. The polypeptides are CC useful for the manufacture of a therapeutic vaccine for treating an CC individual who is infected by a virulent mycobacterium, e.g. M.

CC The present sequence represents a low oxygen induced antigen, which is
                                                                                                                                               Matches
                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                Sequence 195 AA;
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                                       1 MPLLTIGDQFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDEHPGKWRVVFFWPKDFTFV
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                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                 exemplification of the present
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                                                The invention relates to an isolated nucleic acid comprising any one of CC the 6213 antisense sequences given in the specification where expression CC of the nucleic acid inhibits proliferation of a cell. Also included are: CC (1) a vector comprising a promoter operably linked to the nucleic acid CC encoding a polypeptide whose expression is inhibited by the antisense CC nucleic acid; (2) a host cell containing the vector; (3) an isolated CC polypeptide or its fragment whose expression is inhibited by the antisense CC the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular CC proliferation or the activity of a gene in an operon required for CC proliferation; (7) identifying a compound that influences the activity of CC the gene product or that has an activity against a biological pathway CC required for proliferation, or that inhibits cellular proliferation; (8) CC identifying a gene required for cellular proliferation or the biological pathway in which a proliferation-required gene or its gene product lies CC or a gene on which the test compound that inhibits proliferation of an CC compound's activity; (11) a culture comprising strains in which the gene compound that inhibits in which the gene compound that inhibits and compound that inhibits in which the gene compound is activity; (11) a culture compound strains in which the gene compound is activity; (11) a culture compound that inhibits the extent to which each of the strains is present in a culture or collection of collection of an organism. The antisense nucleic acids are useful for identifying the target of a compound that inhibits the collection of an organism. The antisense nucleic acids are useful for identifying the province in a cid to the collection of identifying the care manulatic acids are useful for identifying the care manulatic acids are useful for identified acids.
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identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs, or for screening homologous nucleic acids
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Trawick JD,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ ID NO 61886; 1766pp; English.
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2001US-0342923P.
2002US-00072851.
2002US-0362699P.
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Carr GJ,
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Forsyth
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Xu HH;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         K. pneumoniae or P. aeruginosa. The present sequence is encoded by one of the target prokaryotic essential genes. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at
                                                                 Diagnosing or monitoring infection by Mycobacterium avium ssp. paratuberculosis, by assessing presence or concentration of the bacterial derived antigens or antibodies cross-reacting with the antigens.
                                                                                                                                                                                                       06-SEP-1999;
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                                                                                                                                                                                                                                                                                                         Misc-difference
                                                                                                                                                                                                                                                                                                                                          Mycobacterium
                                                                                                                                                                                                                                                                                                                                                                                       Amino acid
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                                                                                                               N-PSDB;
                                                                                                                         WPI; 2001-244574/25.
                                                                                                                                                                     (VESO-) VESO AS.
(JONE/) JONES E J.
                                                                                                                                                                                                                                                   15-MAR-2001.
                                                                                                                                                                                                                                                                        WO200118212-A2
                                                                                                                                                                                                                                                                                                                                                               IO1 antigen; paratuberculosis; IO2 antigen; Crohn's disease; vaccine
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                                                                                                               AAF80135.
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                                                                                                                                                                                                                                                                                                                                                                                     sequence of the
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                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
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                                                                                                                                                                                                                                                                                               /note= "encoded by AAG
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90.3%;
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The present sequence represents the IO1 antigen of Mycobacterium avium. The specification describes a method for diagnosing and monitoring paratuberculosis infection in a human or non-human animal. The method

Claim 1; Fig 1; 61pp; English.

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RESULT 9
ABU36067
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XX ABU3
XX ABU3
XX APU5
DT 19-J
XX APU5
DE Prot
XX MYCO
XX MYCO
XX MYCO
XX MYCO
XX MYCO
PF 21-M
PF 21-M
PF 21-M
PF 26-S
PR 06-S
PR 06-S
PR 06-S
PR 08-F
PR 08-F
PR 08-F
PR 08-F
PR 08-F
PR 08-F
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XX New
PT for
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Matches
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                                                                                                                                                                                                                                                 21-MAR-2001; 2001US-00815242.

06-SEP-2001; 2001US-00948993.

25-OCT-2001; 2001US-0342923P.

08-FEB-2002; 2002US-00072851.

06-MAR-2002; 2002US-0362699P.
  New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.
                                                                                  WPI; 2003-029926/02.
N-PSDB; ACA39937.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200277183-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mycobacterium leprae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Antisense; prokaryotic essential gene; cell proliferation; drug design
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                                                                                                                                            Zamudio C,
Trawick JD,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MPLLTIGDQFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDEHPGKWRVVFFFWPKDFTFV
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Forsyth
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Xu HH;
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> Claim 25; SEQ ID NO 63991; 1766pp; English

The invention relates to an isolated nucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression co of the nucleic acid inhibits proliferation of a cell. Also included are: (1) a vector comprising a promoter operably linked to the nucleic acid; (2) a host cell containing the vector; (3) an isolated converge nucleic acid; (2) a host cell containing the vector; (3) an isolated contisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular corporated for producing the polypeptide; (6) inhibiting cellular corporated for proliferation, or the activity of a gene in an operon required for proliferation, or that has an activity against a biological pathway crequired for proliferation, or that inhibits cellular proliferation or converge agene on which the test compound that inhibits proliferation of an operon required gene or which the test compound that inhibits proliferation of an operon required gene or its gene product lies or a gene on which the test compound that inhibits proliferation of an operanism acts; (9) manufacturing an antibiotic; (10) profiling a compound activity; (11) a culture comprising strains in which the gene product the strains is present in a culture or collection of the which each of the strains is present in a culture or collection of compound activity in the target of a compound that inhibits proliferation of confict acids are useful for collection of an operanism. The antisense nucleic acids are useful for collection of an operanism, or for screening homologous nucleic acids required corporate for proliferation in cells other than S. aureus, S. typhimurium, c. for screening homologous nucleic acids one activity of the printed specification, but was obtained conficted by anticely from WIPO at ftp.wipo.int/pub/published\_pct\_sequences

Sequence 195 AA;

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                                                                                                                                                                        Similarity
                                                                                         | CPTEIAAFSKLNDEFEDRDAQILGVSIDSEFAHFQWRAQHNDLKTLFFFWLSDIKRELSQ 120
            GDPTLDAGELLKASA 195
                                                          AAGVINADGVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQSDEICACNWRK 180
                                                                             MSLLSIGQQFPAYQLTALIGGDLSKVDAQQPGDYFTTVSSDSHPGKWRVVFFWPKDFTFI
GDPTLNATELLKTSA
                                       Conservative
                                                                                                                                                                      88.3%;
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                                                                                                                                                                      Score 904; DB 6;
Pred. No. 7.2e-95;
                                                                                                                                                              Mismatches
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                                                                                                                                                              Indels
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Myce AAR14303 AAR14303 standard; protein; 193

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02-JAN-1992 (first entry

M.avium avi-3 protein

mycobacterial infection; diagnostic

Mycobacterium avium

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RESULT 11
ADB74335
ADB74335
AC ADB74
XX ADB74
XX ADB74
XX NON-n
KW Nycob
XX NOS-n
KW Hyper
XX Hycob
XX Hycob
XX 16-SE
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PR 12-OC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The sequence coding for the avi-3 protein is also claimed. Transformants containing the coding sequence are cultured to produce recombinant avi-3 for diagnosis of M.avium infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1;
            Smith DR,
                                                       19-AUG-1993;
22-OCT-1993;
                                                                                        16-SEP-1994;
                                                                                                              24-JUN-2003.
                                                                                                                                  US6583266-B1
                                                                                                                                                       Mycobacterium
                                                                                                                                                                           Non-naturally occurring peptide; anion pump protein; tuberculosis; hypersensitivity reaction; tuberculostatic.
                                                                                                                                                                                                             Mycobacterium
                                                                                                                                                                                                                                   04-DEC-2003
                                                                                                                                                                                                                                                         ADB74335
                                                                                                                                                                                                                                                                              ADB74335 standard; protein; 195 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mycobacterium avium derived AVI-3 protein - prepd. from new transformant
transformed by plasmid, used as diagnostic agent for mycobacterium avium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1991-307344/42.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29-DEC-1989;
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                                  (GENO-) GENOME THERAPEUTICS CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (AJIN ) AJINOMOTO
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                                                                                                                                                                                                                                                                                                                                                   DPTLDAGELLKASA 195
                                                                                                                                                                                                                                                                                                                                                                              AGVLNADGVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQSDELCACNWRKG
                                                                                                                                                                                                                                                                                                                                     DPTLNATELLKASA 193
                                                                                                                                                                                                                                                                                                                                                                                                                           PTEIATFGKLNDEFEDRDGQVLGVSIDSEFVHFNWRAQHEDLKNLPFPMLSDIKRELSLA
                                                                                                                                                                                                                                                                                                                                                                                                                                        PTEIAAFSKLNDEFEDRDAQILGVSIDSEFAHFQWRAQHNDLKTLFFFWLSDIKRELSQA 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PLLTIGDQFPAYELTALIAGDLSKVDAKQPGDYFTTITSEDHAGKWRVVFFWFKDFTFVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PLLTIGDQFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDEHPGKMRVVFFMPKDFTFVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Page 1 and Fig 3; 12pp; Japanese.
            Mao J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₹
                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                            leprae non-naturally occurring peptide #58
                                                                                                                                                       leprae.
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                                                       93US-00109181.
93US-00142558.
                                                                                       94US-00311731.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           88.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 901.5; DB 2;
Pred. No. 1.4e-94;
6; Mismatches 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      193;
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DR N-PSDB; ADB74276.

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New Mycobacterium tuberculosis anion pump peptide useful for as PT tuberculosis vaccine and diagnosis of tuberculosis infection.

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PS Disclosure; SEQ ID NO 84; 26pp; English.

XX

Disclosure; SEQ ID NO 84; 26pp; English.

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PS Disclosure; SEQ ID NO 84; 26pp; English.

XX

The invention relates to a non-naturally occurring peptide of CC Mycobacterium tuberculosis comprising an amino acid sequence corresponding to an anion pump protein. The invention also relates to a cC non-naturally occurring nucleic acid corresponding to a DNA sequence of Mycobacterium tuberculosis or Mycobacterium leprae. The new peptide is cc useful as a vaccine against Mycobacterium tuberculosis or Mycobacterium cc leprae or for screening for new tuberculosis drugs. Purified proteins cc response. The sequences of the invention may elicit a specific immune response of individuals exposed to detect hypersensitivity response. The peptide may also be used to detect hypersensitivity captured for the sequence represents Mycobacterium tuberculosis or cc a patient's sera. This sequence represents Mycobacterium leprae non-naturally occurring peptide of the invention. Note: The sequence data for this patent did not form part of the printed specification but was cobtained in electronic format directly from USPTO at Sequence 195 AA;

Sequence 195 AA;
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Query Match Best Local S Matches 167 Local Similarity nes 167; Conserv 181 181 121 121 61 61 \_ 1 MPLLTIGDQFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDEHPGKWRVVFFWPKDFTFV AAGVLNADGVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQSDELCACNWRK 180 CPTEIAAFGKLNEEFEGRGAQILGVSIDSEFVHFQWRAQHEDLKRLPFPMLSDIKRDVSA 120 MSLLSIGQQFPAYQLTALIGGDLSKVDAQQPGDYFTTVSSDSHPGKWRVVFFWPKDFTFI 60 GDPTLNATELLKTSA 195 GDPTLDAGELLKASA 195 CPTEIAAFSKLNDEFEDRDAQILGVSIDSEFAHFQWRAQHNDLKTLPFPMLSDIKRELSQ 120 ASGALNADGVADRVTFIVDPDNDIQFVSVTAGSVGRNVEEVLRVLDALQSDQLCACNWRK 180 Conservative 87.7%; 14; Score 898; DB 7; Pred. No. 3.5e-94; 4; Mismatches 14 14; Length 195; Indels <u>.</u> Gaps

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ABU25828

ABU25828

ID ABU25828 standard; protein; 198 AA.

XX

AC ABU25828;

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AC ABU25828;

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Protein encoded by Prokaryotic essential gene #11355.

XX

AR

Antisense; prokaryotic essential gene; cell proliferation; drug design.

XX

Corynebacterium diphtheriae.

XX

PD 03-OCT-2002.

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PD 03-OCT-2002.

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21-MAR-2002; 2002WO-US009107.

XX

21-MAR-2001; 2001US-00815242.
PR 06-SEP-2001; 2001US-00815242.
PR 06-FEB-2002; 2002US-00072851.
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RESULT 13
AEB39863
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the 6213 antisense sequences given in the specification where expression of the nucleic acid inhibits proliferation of a call. Also included are:

(1) a vector comprising a promoter operably linked to the nucleic acid cancoding a polypeptide whose expression is inhibited by the antisense comprising the vector; (3) an isolated concleic acid; (2) a host cell containing the vector; (3) an isolated containing the vector; (3) an isolated containing the vector; (3) an isolated containing the vector; (3) an isolated containing the vector; (3) an isolated containing the vector; (3) an isolated containing the polypeptide; (6) inhibiting cellular containing the polypeptide; (6) inhibiting cellular proliferation; (7) identifying a compound that influences the activity of the gene product or that has an activity against a biological pathway in which a proliferation, or that inhibits cellular proliferation; (8) contains acts; (9) manufacturing an antibiotic; (10) profiling a compound shat inhibits proliferation of an organism acts; (10) profiling a compound shat inhibits proliferation of an compound chat inhibits proliferation of an compound shat inhibits proliferation of an compound contains in which the gene product lies compound shat inhibits proliferation of an compound contains in which the gene contains in which the gene contains; or (13) identifying the target of a compound that inhibits the compound contains; or (13) identifying the target of a compound that inhibits the condition of an organism. The antisense nucleic acids are useful for identifying proteins or screening for homologous nucleic acids required contains in which the gene proliferation to isolate candidate molecules for rational conditions. The present sequence is encoded by one of the target prokaryotic essential genes. Note: The sequence data for this patent did not format directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 125;
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Wall
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           06-MAR-2002; 2002US-0362699P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ftp.wipo.int/pub/published_pct_sequences
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Trawick
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                                                                                                                                                                                                        AAGVLNADGVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQSDELCACNWRK 180
                                                                                                                                                                                                                                                                      CPTEIAAFSKLNDEFEDRDAQILGVSIDSEFAHFQWRAQHNDLKTLPFPMLSDIKRELSQ 120
                                                                                                                                                                                                                                                                                                                                                   MPLLTIGDQFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDEHPGKWRVVFFWPKDFTFV 60
                                                                                                                                                                  ALGVENEEGVADRATFIIDPDGIIQFVSVTPDAVGRNVDEVLRVLDALQSEEVCACNWQK
                                                                                                                                                                                                                                                   CPTEIAAFGKLDEEFQDRDTQILGGSIDNEFSHFNWRATHPELKTVPFPLFSDIKHDLIK
                                                                                                                                                                                                                                                                                                                                 MSILTVGEKFPEFNLTALKGGDLHDVNASQPEDYFETVSLDKYEGKWKVVFFYPKDFTFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQ ID NO 53752; 1766pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
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Carr GJ,
                                                                                                                                                                                                                                                                                                                                                                                                                29; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 693; DB 6;
Pred. No. 1.2e-70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Haselbeck R, Yamamoto R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ohlsen
Forsyth
                                                                                                                                                                                                                                                                                                                                                                                                                30; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 198;
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Xu HH;
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Buchrieser C, Tichit M, Rusniok C, Bouchier C, Jarraud S;
                                                                                                                                                                                                                                                                                     Sequence 179 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New genome of Legionella pneumophila Paris strain and derived polypeptides, useful for detection or identification of the sifor treatment and prevention of infections.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 3; SEQ ID NO 4195;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (INSP ) INST PASTEUR.

(INRM ) INSERM INST NAT SANTE & RECH MEDICALE.

(UYLY-) UNIV LYON 1 BERNARD CLAUDE.

(CNRS ) CNRS CENT NAT RECH SCI.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23-SEP-2004; 2004WO-IB003578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO2005049642-A2
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                                                                                                                                                                                                                                                                                                                   pneumophila protein.
                                113
 182 DPTL 185
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                                                                                                                                                       | MITVGNKFPEFQLKATVANDINNA------PQMISNETYRGKWLVVFFWPKDFTFVCP
                                                                                                                                                                               GVL-NADGVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQSDELCACNWRKG 181
                                                                                                                    TEIAAFSKLNDEFEDRDAQILGVSIDSEFAHFQWRAQHNDLKTLFFFMLSDIKRELSQAA 122
                                                                                               TEIAEFGRLNSEFADRDAQILGGSTDSEFVHLAWRNQHPDLKDLPFPMLADVKRELTANL
                                GILDDEEGVAQRATFIVDPQGITRFVMVTDLNVGRNPAEVLRVLDALQTDELCPCNWKKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         infection; Antibacterial; Vaccine
                                                                                                                                                                                                                          Conservative
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                                                                                                                                                                                                                                       58.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          660pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Etienne J, Ma L, Cazalet C, Zidane N, Magnier A, Kunst F,
                                                                                                                                                                                                                          26;
                                                                                                                                                                                                                       Score 566.5; DB 9;
Pred. No. 3.5e-56;
%; Mismatches 42;
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Vandenesch
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Best Local
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(INRM )
(UYLY-)
                                                                                                                                                                                                                                                                Sequence 198
                                                                                                                                                                                                                                                                                                        compositions, for treatment and prevention of intections by L. pneumophila. The present squence represents the amino acid sequence of a
                                                                                                                                                                                                                                                                                                                       surface proteins, are targets for identification of inhibitors. (II), vectors that contain (I), are useful as vaccines and immunogenic compositions, for treatment and prevention of infections by \bf L
                                                                                                                                                                                                                                                                                                                                                                   Philadelphia strains of Legionella pneumophila and to prepare recombinant (hybrid) polypeptides (II). (II) are also useful for preparation of specific antibodies (Ab), also used for detection/identification of Legionella, and some (I), specifically those involved in synthesis of
                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to an isolated or purified nucleotide sequences from Legionella pneumophila Paris strain. (I), and their related sequences or fragments, are useful as primers and probes for detection and amplification, including differentiation between the Paris and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Buchrieser C, Tichit M Rusniok C, Bouchier C, Jarraud S;
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hopeptides, useful for detection or identification of the s
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                                             GVL-NADGVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQSDELCACNWRKG
   DPTL 185
                              GILDDEEGVAQRATFIVDPQGITRFVMVTDLNVGRNPAEVLRVLDALQTDELCPCNWKKG
                                                                                        TEIAEFGRLNSEFADRDAQILGGSTDSEFVHLAWRNQHPDLKDLPFPMLADVKRELTANL
                                                                                                                 TEIAAFSKLNDEFEDRDAQILGVSIDSEFAHFQWRAQHNDLKTLPFPMLSDIKRELSQAA 122
                                                                                                                                                MITVGNKFPEFQLKATVANDINNA-----FQMISNETYRGKWLVVFFWPKDFTFVCP
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Zidane N, 1
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                                                                                                                                                                                                                      Score 566.5; DB Pred. No. 4e-56;
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from USPTO

at seqdata.uspto.gov/sequence.html

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microbial source. The invention also relates to a transformed plant comprising the recombinant DNA construct and a method of producing a CC cransformed plant having an improved property. The plant is a crop plant CC such as maize or soybean. The method of producing a transformed plant CC such as maize or soybean. The method of producing a transformed plant CC having an improved property comprises transformed plant with the CC recombinant DNA construct and growing the transformed plant with the CC polynucleotide or polypeptide is useful for improving plant properties. CC The recombinant DNA construct is useful for producing plant properties. CC improved plant properties, e.g. improved cold, heat or drought tolerance, increased resistance to plant disease, better growth rate by modification of the cell cycle pathway with plant growth regulators, increased rate of homologous recombination, modification of protein yield and/or CC content, improved yield by modification of photosynthesis or by providing improved plant growth and development under at least one stress CC condition, improved plant growth and development under at least one stress CC condition, improved plant growth as bacterial polypeptide used in the scope of the invention. Note: The sequence data for this patent did not form part of the printed specification but was obtained in electronic forms at from 19270 at sequence cov/sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New recombinant DNA construct comprising a promoter positioned to provide for expression of a polynucleotide encoding a polypeptide from a microbial source, useful for producing plants with improved properties.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cao
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          promoter functional in a plant cell, where the promoter is positioned to provide for expression of a polynuclectide encoding a polypeptide from a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 1; SEQ ID NO 19388; 122pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21-FEB-2002;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacterial polypeptide #19388
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to a recombinant DNA construct comprising
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2004-061375/06.
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SLATER S
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     phosphorus; photosynthesis; lignin; galactomannan, polypeptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2002US-0360039P
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OM protein - protein search, using sw model
                                                                                            GenCore version 5.1.7 Copyright (c) 1993 - 2006 Biocceleration Ltd.
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Run on: March 23, 2006, 05:11:18; Search time 7.75813 Seconds (without alignments) 2418.401 Million cell updates/sec

Title: Perfect score:

Sequence: US-10-617-038-26 1024 1 MPLLTIGDQFPAYQLTALIG......CNWRKGDPTLDAGELLKASA 195

Scoring table: BLOSUM62 Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database : PIR 80:\*
1: pir1:\*
2: pir2:\*
3: pir3:\*
4: pir4:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

| 29                 | 28              | 27                 | 26     | 25     | 24     | 23     | 22     | 21     | 20                 | 19              | 18                 | 17                | 16              | 15                 | 14                 | 13              | 12                 | 11  | 10     | 9      | 89                 | 7                  | თ               | տ      | 4      | ω      | N      | ۲          | No.         | Result |
|--------------------|-----------------|--------------------|--------|--------|--------|--------|--------|--------|--------------------|-----------------|--------------------|-------------------|-----------------|--------------------|--------------------|-----------------|--------------------|-----|--------|--------|--------------------|--------------------|-----------------|--------|--------|--------|--------|------------|-------------|--------|
| 312                | 314             | 314.5              | 314.5  |        | 315    | 16     | 316.5  | 317.5  | 318                | 15              | 320.5              | 20.               | N               | 22                 | 325.5              | 28.             | w                  | 336 | 345.5  | 350.5  | 351.5              | 360                | 361.5           | 444    | 904    | 935    | 1024   | 1024       | Score       |        |
| 30.5               | ٠               |                    | ٠      | ٠      | •      | 30.9   | •      | •      | 31.1               | •               | 31.3               | ٠                 | •               |                    | 31.8               |                 |                    |     |        |        | 34.3               | •                  | ٠               | •      | 88.3   |        | 100.0  | 100.0      | Match       | Query  |
| 198                | 192             | 210                | 199    | 198    | 198    | 242    | 198    | 265    | 257                | 199             | 200                | 199               | 226             | 200                | 199                | 181             | 181                | 178 | 183    | 200    | 203                | 199                | 180             | 184    | 195    | 195    | 195    | 195        | Length      |        |
| N                  | N               | N                  | N      | N      | N      | N      | N      | N      | N                  | N               | N                  | N                 | N               | N                  | N                  | N               | N                  | N   | N      | N      | N                  | N                  | N               | N      | N      | N      | N      | N          | 踞           |        |
| A57716             | T41413          | T06318             | A46711 | H71801 | I68897 | S49173 | C64715 | T09211 | JQ0064             | I52425          | AB0388             | A48513            | S43598          | AB0552             | F83540             | AD1275          | AD1638             | 11  | A83983 | S76284 | AI2385             | S73193             | 986             | AH3581 | E87164 | A43858 | B70679 | 871013     | ID          |        |
| thiol-specific ant | thioredoxin per | thiol-specific ant |        |        | thic   | heti   | m      |        | MER5 protein - mou | probable thiore | probable alkyl hyd | macrophage 23K st | mer5 homolog RC | probable peroxidas | probable alkyl hyd | 2-cys peroxired | 2-cys peroxiredoxi |     |        | ש      | peroxiredoxin [imp | hypothetical prote | 2-cys peroxired |        |        | _      | _      | l hydroper | Description |        |

RESULT 2 B70679 alkyl hydroperoxide reductase - Mycobacterium tuberculosis (strain H37RV) N;Alternate names: ahpC protein

| 4.4<br>5         | 42<br>43   | 39<br>40                                 | 37<br>38                                 | 35<br>36                                 | 34                 | u<br>u             | 32                 | 31                | 30                 |
|------------------|--|--|--|--|--------------------|--------------------|--------------------|-------------------|--------------------|
| 278.5<br>276.5   | 282.5<br>281<br>279  | 289.5<br>284.5                           | 294.5<br>291.5                           | 300.5<br>294.5                           | 302                | 302.5              | 303                | 304               | 311                |
| 27.2<br>27.0     | 27.6<br>27.4<br>27.2   | 28.3<br>27.8                             | 28.8<br>28.5                             | 29.3<br>28.8                             | 29.5               | 29.5               | 29.6               | 29.7              | 30.4               |
| 196<br>187       | 207<br>195<br>188  | 273<br>233                               | 202<br>200                               | 198<br>198                               | 200                | 200                | 197                | 195               | 576                |
| NN               | N N N  | NN                                       | NN                                       | NN                                       | N                  | N                  | N                  | N                 | N                  |
| S69732<br>D87610 | E82287<br>G71492<br>D71314                                     | A43862<br>S67947                         | C97756<br>A71689                         | B81453<br>A47362                         | G83204             | I51016             | C84951             | JC2258            | T16005             |
|                  | antioxidant, AhpC/<br>probable thio-spec<br>probable alkyl hyd | 29K peripheral mem<br>alkyl hydroperoxid | thioredoxin peroxi<br>thioredoxin peroxi | alkyl hydroperoxid<br>thiol-specific ant | probable peroxidas | proliferation asso | alkyl hydroperoxid | substrate protein | hypothetical prote |

## ALIGNMENTS

| ₽ <b>Q</b>  | φ <b>Q</b>   | D Qy  | ₽ &   | Query Match<br>Best Local<br>Matches 19  | A;Gene: ah<br>C;Superfan<br>F;23-162/I   | A; Molecule A; Residues: A; Cross-ref A; Crosrimen C: Genetics:   | A; Residues: 1-13 of A; Cross-references: A; Experimental sour. A; Note: the nucleot. A; Accession: \$71011  | A;Status:  | Mol. Microbiol. 19, A;Title: ahpC, A ge- A;Reference number: A;Accession: S71013   | S71013 S71013 Alkyl hydr C;Species: C;Date: 12 C;Accessic  |  |
|---|--|---|---|--|--|---|--|--|--|--|--|
| 181 GDPTLDAGELLKASA 195<br>               <br>181 GDPTLDAGELLKASA 195 | 121 AAGVINADGVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQSDELCACNWRK 180<br>              <br>121 AAGVINADGVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQSDELCACNWRK 180 | 61 CPTEIAAFSKLNDEFEDRDAQILGVSIDSEFAHFQWRAQHNDLKTLPFPMLSDIKRELSQ 120<br> | 1 MPLLTIGDQFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDEHPGKWRVVFFWPKDFTFV 60<br> | / Match 100.0%; Score 1024; DB 2; Length 195;<br>Local Similarity 100.0%; Pred. No. 1e-86;<br>1es 195; Conservative 0; Mismatches 0; Indels 0; Gaps 0; | A;Gene: ahpC<br>A;Gene: ahpC<br>C;Superfamily: alkyl hydroperoxide reductase C22 protein; alkyl hydroperoxidase c22 prote<br>F;23-162/Domain: alkyl hydroperoxidase c22 protein homology <c22></c22> | A;Molecule type: DNA<br>A;Residues: 1-195 <wiw><br/>A;Residues: 1-195 <wiw><br/>A;Cross-references: UNIPARC:UPI000002FC7F; EMBL:U24084; NID:g1002373; PIDN:AAB38112.1; PJ<br/>A;Experimental source: ATCC 35729<br/>C:Genetics:</wiw></wiw> | A;Restaues: 1-13 (mile) A;Cross-references: UNIPROT:Q57348; UNIPARC:UPI000002FC7F; EMBL:U24083; NID:g1002370; PII A;Experimental source: ATCC 35723 A;Note: the nucleotide sequence was submitted to the EMBL Data Library, April 1995 A;Accession: S71011 | A;Status: Tucleic acid sequence not shown; translation not shown A;Mclecule type: DNA A;Mclecule type: DNA | Mol. Microbiol. 19, 1025-1034, 1996 Mol. Microbiol. 19, 1025-1034, 1996 A;Title: ahpC, A gene involved in isoniazid resistance of the Mycobacterium tuberculosis A;Reference number: S71011; MUID:96249696; PMID:8830260 A;Accession: S71013 | KESULT 1 S71013 S71013 C;Species: Mycobacterium bovis C;Species: Mycobacterium bovis C;Species: Mycobacterium bovis C;Date: 12-Feb-1998 #sequence_revision 20-Feb-1998 #text_change 09-Jul-2004 C;Accession: S71011; S71011 D:wilson TM : Colling NM |  |

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Alkyl hydroperoxidase C (EC 1.6.4.-) - Mycobacterium avium

N;Alternate names: Avi-3 antigen

C;Species: Mycobacterium avium

C;Date: 10-Mar-1993 #sequence revision 18-Nov-1994 #text_change 09-Jul-2004

C;Accession: A43858; TO9655

R;Yamaguchi, R; Matsuo, K; Yamazaki, A.; Takahashi, M.; Fukasawa, Y.; Wada, M.; Abe, C

Infect. Immun. 60, 1210-1216, 1992

A;Title: Cloning and expression of the gene for the Avi-3 antigen of Mycobacterium avium
A;Reference number: A43858; MUID:92175967; PMID:1371765

A;Accession: A43958

A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-195 <YAM>
A;Residues: 1-195 <YAM>
A;Cross-references: UNIPROT:057413; UNIPARC:UPI000002FC83; GB:U18263; NID:g1040852; PIDN
A;Note: sequence extracted from NCBI backbone (NCBIN:85445, NCBIP:85446)

R;Sherman, D.R.; Sabo, P.J.; Hickey, M.J.; Arain, T.M.; Mahairas, G.G.; Yuan, Y.; Barry, Proc. Natl. Acad. Sci. U.S.A. 92, 6625-6629, 1995

A;Title: Disparate responses to oxidative stress in saprophytic and pathogenic mycobacte A;Accession: T09655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Status: preliminary; nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-195 <COL>
A;Cross-references: UNIPROT:Q57348; UNIPARC:UPI000002FC7F; GB:Z81451; GB:AL123456;
A;Experimental source: strain H37Rv
R;Deretic, V.; Philipp, W.; Dhandayuthapani, S.; Mudd, M.H.; Curcic, R.; Garbe, T.;
Mol. Microbiol. 17, 889-900, 1995
Mol. Microbiol. 17, 889-900, 1995
A;Title: Mycobacterium tuberculosis is a natural mutant with an inactivated oxidati
A;Reference number: S70169; MUID:96123431; PMID:8596438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, C.; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, 537-544, 1998

A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K., Whitehead, S.; Barrell, B.G.

A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete genome A;Reference number: A70500; MUID:98295987; PMID:9634230

A;Accession: B70679
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A; Residues: 1-195 < DER>
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Similarity 100.0%; Pred. No. 1e-86;
95; Conservative 0; Mismatches 0; Indels 0
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alkyl hydroperoxidase c22 protein homology <C22>
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A;Gene: ahpC
C;Superfamily
C;Keywords: o
F;23-162/Doma
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A;Molecule type: DNA
A;Residues: 1-195 <SHE>
A;Cross-references: UNIPARC:UPI000002FC83; EMBL:U18263; NID:g1040852; PIDN:AAA79917.1;
C;Genetics:
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A;Title: Massive gene decay in the leprosy bacillus.
A;Reference number: A86909; MUID:21128732; PMID:11234002
A;Accession: E87164
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A; Residues: 1-195 <STO>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alkyl hydroperoxide reductase [imported] - Mycobacterium
C;Species: Mycobacterium leprae
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Best Local :
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Best Local Similarity
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                                   GDPTLDAGELLKASA 195
                                                                                        AAGVLNADGVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQSDELCACNWRK 180
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                                                                    CPTEIAAFGKLNEEFEGRGAQ:
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86.7%; Pred. No. _
4ve 12; Mismatches
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Pred. No. 1.1e-75;
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2-cys peroxiredoxin homolog ykuU - Bacillus subtilis
C:Species: Bacillus subtilis
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C:Species: Dec-1997 #sequence_revision 05-Dec-1997 #text_change 09-Jul-2004
C:Accession: B69867
C:Accession: B69867
C:Accession: B69867
C:Species: Baruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, N.M.; Chc
C: Bron, S.; Brouillet, S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, N.M.; Chc
A.; Ehrlich, S.D.; Emmerson, P.T.; Entian, K.D.; Errington, J.; Fabret, C.; Ferrari, E.
Nature 390, 249-256, 1997
A:A;Authors: Foulger, D.; Fritz, C.; Fujita, M.; Fujita, Y.; Fuma, S.; Galizzi, A.; Galler
iech, J.; Harwood, C.R.; Henaut, A.; Hilbert, H.; Holsappel, S.; Hosono, S.; Hullo, M.F.
Koetter, P.; Koningstein, G.; Krogh, S.; Kumano, M.; Kurita, K.; Lapidus, A.; Lardinois,
A;Authors: Lauber, J.; Lazarevic, V.; Lee, S.M.; Levine, A.; Liu, H.; Masuda, S.; Maueel
Y, M.; Ogawa, K.; Ogiwara, A.; Odega, B.; Park, S.H.; Parro, V.; Pohl, T.M.; Portetelle
Rieger, M.; Rivolta, C.; Rocha, E.; Roche, B.; Rose, M.; Sadaie, Y.; Sato, T.; Scanlon,
A;Authors: Schleich, S.; Schroeter, R.; Scoffone, F.; Sekiguchi, J.; Sekowska, A.; Seror
akeuchi, M.; Tamakoshi, A.; Tanaka, T.; Torpstra, P.; Tognoni, A.; Tosato, V.; Uchiyama,
T.; Winters, P.; Wipat, A.; Yamamoto, H.; Yamane, K.; Yasumoto, K.; Yata, K.; Yoshida, K.
A; Hille: The complete genome sequence of the Gram-postive bacterium Bacillus subtilis.
A;Reference number: A69580; MUID:98044033; PMID:9384377
A;Scattus. nrealiminary. nurleic acid sequence of the Gram-postive bacterium Bacillus subtilis.
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C;Superfamily: alkyl hydroperoxide reductase
C;Keywords: oxidoreductase
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R;Delvecchio, V.G.; Kapatral, V.; Redkar, R.J.; Patra, G.; Mujer, C.; Los, T.; Ivanova, R;Delvecchio, V.G.; Kapatral, V.; Redkar, R.J.; Patra, G.; Mujer, C.; Los, T.; Ivanova, P.; Mazur, M.; Goltsman, E.; Selkov, E.; Elzer, P.H.; Hagius, S.; O'Callaghan, D.; Letess Proc. Natl. Acad. Sci. U.S.A. 99, 443-448, 2002
A;Title: The genome sequence of the facultative intracellular pathogen Brucella melitens A;Reference number: AD3252; PMID:11756688
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A;Cross-references: UNIPROT:O34564; UNIPARC:UPI000006031C; GB:Z99111; GB:AL009126;
                                A; Residues: 1-180 < KUN>
                                                                              A;Status: preliminary; nucleic acid sequence not shown; translation not shown A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: DNA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Species: Brucella melitensis
C;Date: 01-Feb-2002 #sequence_revision 01-Feb-2002 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alkyl hydroperoxide reductase C22 protein (EC 1.6.4.-) [imported] - Brucella melitensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           114 IKRELSQAAGVLNADGVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQSDEL 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       54
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CACNWRKGDPTLDAGELLKAS 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PKDFTFVCPTEIAAFSKLNDEFEDRDAQILGVSIDSEFAHFQWRAQHNDLKTLPFPMLSD 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LLTIGDQFPAYQLTALIGGDLSKVDAKQPG------DYFTTITSDEHPGKWRVVFFW 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TINGSLVDGLGVRSPDGGAYRYTFVVDPDNVIQHVYATNLNVGRAPKDTLRVLDALQTDEL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PKDFTFVCPTEIAEFARLASEFEDRDAVVLGGSTDNEFVKLAWRRDHKDLNKLPIWSFAD
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Pred. No. 1.9e-33;
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A;Note:
C;Geneti
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C;Species: chloroplast Porphyra purpurea
C;Date: 19-Mar-1997 #sequence_revision 09-May-1997 #text_change 09-
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A;Gene: ykuU
C;Superfamily: alkyl hydroperoxide reductase C22 protein; alkyl hydroperoxidase C22
F;13-157/Domain: alkyl hydroperoxidase C22 protein homology <C22>
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A; Residues: 1-199 < REI>
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A; Accession: S73193
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Plant Mol. Biol. Rep. 13, 333
A; Title: Complete nucleotide
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                                                                                                                                                                                                                                                                                                                                                                                                                                              Superfamily: alkyl hydroperoxide reductase C22 protein; alkyl hydroperoxidase c22; Reywords: chloroplast
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                                                                                                                                                                                                                                                                                                                                                                                                                        ;17-157/Domain:
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Best Local
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                                                                                                                        121 AAGVINADGVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVIRVIDALQ-----SDEICA 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            122 AGVI-NADGVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVIDALQSDELCACNWRK 180
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                                                                                                                                                                                                                                                                                           4 LTIGDQFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDBHPGKWRVVFFWPKDFTFVCPT
                                                                                                                                                                                                                                                                                                                                       Similarity 39.8
76; Conservative
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                                                                                                                                                                                        BIAAFSKINDEFEDRDAQIIGVSIDSEFAHFQW----RAQHNDLKTLFFFMLSDIKRELSQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IGDQFPAYQLTALIGG-DLSKVDAKQPGDYFTTITSDEHPGKWRVVFFWPKDFTFVCPTE 64
                                       CNWRKGDPTLD 186
                                                                                                                                                                    EITAFSDKYSDFSELNTEILGVSVDSEYSHLAWLQTDRESGGLGDLEYPLVSDLKKEISI 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GDPTL 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VGKQAPRFEMEAVLASKEFGKVSLEE-----NMKND----KWTVLFFYPMDFTFVCPTE
                                                                                   AYNVLNSGGVALRGLFIIDPKGIIQYSTVNNLEFGRSVEETLRVLQAIQYVQAHPDEVCP
                                                                                                                                                                                                                                                      LQVGQIAPDFSATAVYDQE-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ITAMSDRYDEFEDLDAEVIGVSTDTIHTHLAWINTDRKENGLGQLKYPLAADTNHEVSRE 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IAAFSKLNDEFEDRDAQILGVSIDSEFAHFQW---RAQHNDLKTLPFPMLSDIKRELSQA 121
                                                                                                                                                                                                                                                                                                                                                                                                                           alkyl hydroperoxidase c22 protein homology
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41.1%;
                                                                                                                                                                                                                                                                                                                                                           35.2%;
  186
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de sequence of the Porphyra purpurea chloroplast genome
                                                                                                                                                                                                                                                                                                                                       34;
                                                                                                                                                                                                                                                                                                                                       Score 360; DB 2;
Pred. No. 1.1e-25;
34; Mismatches 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 361.5; DB 2; Pred. No. 7e-26;
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                                                                                                                                                                                                                                                      ----FKTIKLSDFKNKYVILFFYPLDFTFVCPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   shown; translation not
                                                                                                                                                                                                                                                                                                                                         61;
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RESULT 8
AI2385
peroxiredoxin [imported]
C;Species: Nostoc sp. PC

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(strain PCC 7120)

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A;Cross-references: UNIPROT:Q55624; UNIPARC:UPI0000139C78; EMBL:D64000; GB:AB001339; NIE A;Note: the nucleotide sequence was submitted to the EMBL Data Library, June 1996 C;Superfamily: alkyl hydroperoxide reductase C22 protein; alkyl hydroperoxidase c22 protein; alkyl hydroperoxidase c22 protein; alkyl hydroperoxidase c22 protein homology <C22>
                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Species: Synechocystis sp.
A;Variety: PCC 6803
C;Date: 25-Apr-1997 #sequence_revision 25-Apr-1997 #text_change 09-Jul-2004
C;Accession: S76284
R;Kaneko, T.; Sato, S.; Kotani, H.; Tanaka, A.; Asamizu, E.; Nakamura, Y.; Miy
o, K.; Okumura, S.; Shimpo, S.; Takeuchi, C.; Wada, T.; Watanabe, A.; Yamada,
DNA Res. 3, 109-136, 1996
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$76284
hypothetical protein - Synechocystis sp.
                                                                                                                                                                                                                                                                                                                                       A;Status: preliminary A;Molecule type: DNA
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C;Superfamily: alkyl hydroperoxide reductase C22 protein; alkyl hydroperoxidase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Molecule type: DNA
A;Residues: 1-203 <KUR>
A;Cross-references: UNIPROT:08YNC5; UNIPARC:UPI00000CEBD4; GB:BA000019; PIDN:BAB76340.1.
A;Experimental source: strain PCC 7120
                                                                                                                                                                                                                                                                                                                    A; Residues: 1-200 < KAN>
                                                                                                                                                                                                                                                                                                                                                                            A; Accession: S76284
                                                                                                                                                                                                                                                                                                                                                                                                   A; Reference number: S74322; MUID: 97061201;
                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Title: Sequence analysis of the genome of the unicellular cyanobacterium Synechocystic
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                                                                                                                                                           Matches
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nostoc sp. strain PCC 7120 is a synonym of Anabaena sp. strain PCC 7120
14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       177
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                                                                                                                 3 LLTIGDQFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDEHPGKWRVVFFWPKDFTFVCP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                     TEIAAFSKLNDEFEDRDAQILGVSIDSEFAHFQW---RAQHNDLKTLPFPMLSDIKRELS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LCACNWRKGDPTL 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SQAAGVLN-ADGVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQ-----SDE 172
TEITAFSDRHSEFTALDTEVVGISVDSEFSHLAWIQTERKMGGIGNINYPLVSDLKKEIS
                                                                            VLRVGQPAPDFTATAIV--DQS-----FQTVKLSTYRGKYLVLFFYPLDFTFVCP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VCPAGWQPGEKTM 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EIAAFSKLNDEFEDRDAQILGVSIDSEFAHFQWRAQHNDLKT----LPFPMLSDIKREL 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LRVGQQAPDFTATAVVDQE------FKTIKLSDYRGKYVVLFFYPLDFTFVCPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LTIGDOFFAYOLTALIGGDLSKVDAKOPGDYFTTITSDEHPGKWRVVFFWPKDFTFVCPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SDAYNVLDPAAGIALRGLFIIDKDGIIQHATINNLAFGRSVDETLRTLQAIQYVQSHPDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EITAFSDRYEEFKKLNTEILGVSVDSEFSHLAW--IQTDRKSGGVGDLNYPLVSDIKKEV 116
                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                             34.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       34.3%; Score 351.5; DB 2
40.9%; Pred. No. 6.7e-25;
tive 34; Mismatches 55
                                                                                                                                                   ; Score 350.5; DB 2, Pred. No. 8.2e-25; 57;
                                                                                                                                                           40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (strain PCC 6803)
                                                                                                                                                                                                                                                                                                                                                                                                   PMID:8905231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                Length 200;
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                                                                                                                                                           Indels
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                                                                                                                                                         21;
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                                                                                                                                                         Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Y.; Miyajima, N.;
Yamada, M.; Yasuda
                                       119
                                                                                                                   62
                                                                            51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            58
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Mismatches

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65

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Conservative

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hypothetical protein 3 - Clostridium pasteurianum c;Species: Clostridium pasteurianum C;Date: 13-Jan-1995 #sequence_revision 13-Jan-1999 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accession: S29119 C;Accessi
                                                                                                         A;Cross-references: UNIPROT:P23161; UNIPARC:UPI000002FC86; EMBL:M60116; NID:g144905; C;Superfamily: alkyl hydroperoxide reductase C22 protein; alkyl hydroperoxidase C22 protein homology <C22>
                                                                                                                                                                                                                                                                                                                                     Biochem. J. 285, 255-262, 1992
A;Title: Cloning, sequencing and expression in Escherichia A;Reference number: S29117; MUID:92344580; PMID:1637309
A;Accession: S29119
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S29119
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A;Title: Complete genome sequence of the alkaliphilic bacterium Bacillus halodurans A;Reference number: A83650; MUID:20512582; PMID:11058132
A;Accession: A83983
                                                                                                                                                                                                                       A; Molecule type: DNA
A; Residues: 1-178 < MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Gene: BH2665
C;Superfamily: alkyl hydroperoxide reductase C22 protein; alkyl hydroperoxidase
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A;Molecule type: DNA
A;Residues: 1-183 <STO>
                                                                                                                                                                                                                                                                                                     A;Status: preliminary
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C; Accession: A83983
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A83983
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;Date: 01-Dec-2000 #sequence_revision 01-Dec-2000 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;Takami, H.; Nakasone, K.; Takaki, Y.; Maeno,
                                   Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              174
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6 IGDQFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDEH--PGKWRVVFFWPKDFTFVCPT
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   Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EYGVLIBEEGIALRGLFIISPEGELMYSVVNHNNIGRDVDETLRVLQALQTGGLCPANWK
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39.2%;
32.8%;
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Score 336; DB 2;
Pred. No. 1.5e-23;
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Pred. No. 2.1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13-Jan-1995 #text_change
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                               Length 178;
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Science 294, 849-852, 2001
A; Authors: Kreft, J.; Kuhn, M.; Kunst, F.; Kurapkat, G.; Madueno, ok, C.; Schlueter, T.; Simoes, N.; Tierrez, A.; Vazquez-Boland, J. A;Title: Comparative genomics of Listeria species.
A;Reference number: AB1077; MUID:21537279; PMID:11679669
A;Accession: AD1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2-cys peroxiredoxin homolog lin1645 [imported] - Listeria innocua (strain Clip11262) C;Species: Listeria innocua (C;Date: 27-Nov-2001 #sequence_revision 27-Nov-2001 #text_change 09-Jul-2004 C;Accession: AD1638 R;Glaser, P.; Frangeul, L.; Buchrieser, C.; Amend, A.; Baquero, F.; Berche, P.; Bloer, Dominguez-Bernal, G.; Duchaud, B.; Durand, L.; Dussurget, O.; Entian, K.D.; Fsihi D.; Jones, L.M.; Karst, U.
                                                   2-cys peroxiredoxin homolog lmo1604 [imported] - Listeria monocytogenes (strain C;Species: Listeria monocytogenes C;Species: Listeria monocytogenes C;Date: 27-Nov-2001 #sequence_revision 27-Nov-2001 #text_change 09-Uul-2004 C;Accession: AD1275 R;Glaser, P.; Frangeul, L.; Buchrieser, C.; Amend, A.; Baquero, F.; Berche, P.; Dominguez-Bernal, G.; Duchaud, E.; Durand, L.; Dussurget, O.; Entian, K.D.; F. D.; Jones, L.M.; Karst, U.
                                                                                                                                                                                         RESULT 13
AD1275
Science 294, 849-852, 2001
A;Authors: Kreft, J.; Kuhn, M.; Kunst, F.; Kurapkat, G.; Madueno, E.; Maitournam, A.; Mook, C.; Schlueter, T.; Simoes, N.; Tierrez, A.; Vazquez-Boland, J.A.; Voss, H.; Wehland
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A;Experimental source: strain Clip11262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Status: preliminary A;Molecule type: DNA
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                         EIAAFSKLNDEFEDRDAQILGVSIDSEFAHFQWR----AQHNDLKTLPFPMLSDIKRELSQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IGDOFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDEH--PGKWRVVFFWPKDFTFVCPT 63
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tian, K.D.; Fsihi, H
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A;Residues: 1-199 <3TO>
A;Cross-references: UNIPROT:Q9I593; UNIPARC:UPI00000C5187; GB:AE004519; GB:AE004091;
A;Experimental source: strain PAO1
C;Genetics:
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Best Local Similarity 37.1
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Best Local Similarity
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                     RKGDPTLDAGELLKASA
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C;Genetics:
A;Gene: lmo1604
C;Superfamily: alkyl hydroperoxide reductase C22 protein; alkyl hydroperoxidase C22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A,Title: Comparative genomics of Listeria species.
A,Reference number: AB1077; MUID:21537279; PMID:11679669
A,Accession: AD1275
A,Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: UNIPROT:Q8Y6S9; UNIPARC:UPI00000CF186; GB:NC_003210; PIDN:CAC99682.1.
A;Experimental source: strain EGD-e
115 DYGVLIEEEGVALRGLFIINPKGEIQYEVVHHNNIGREVDEVLRVLQALQTGGLCPINWQ
                                      121 AAGVL-NADGVADRVTFIVDPNNBIQFVSATAGSVGRNVDEVLRVLDALQSDBLCACNWR 179
                                                                                                                                    BIAAFSKLNDEFEDRDAQILGVSIDSEFAHFQWR---AQHNDLKTLPFFPMLSDIKRELSQ 120
                                                                                                                                                                                                                                                             IGDOFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDEH--PGKWRVVFFWPKDFTFVCPT
                                                                                                           EIVAISARSDEFDALNARIIGASTDTIHSHLAWTNTPIKEGGIGKLNYPLAADTNHQVAS 114
                                                                                                                                                                                                                 VGTQAPRFEMEAVM------PNQTFGKVSLEKNIEDDKWTILFFYPMDFTFVCPT
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                                                                                                                                                                                                                                                                                                                          39;
                                                                                                                                                                                                                                                                                                                    Score 328.5; DB 2;
Pred. No. 7.5e-23;
9; Mismatches 62;
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        174
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C;Species: Pseudomonas aeruginosa C;Date: 15-Sep-2000 #sequence\_revision 15-Sep-2000 #text\_change 09-Jul-2004 C;Accession: F83540 probable alkyl hydroperoxide reductase PAO848 [imported] - Pseudomonas aeruginosa C;Species: Pseudomonas aeruginosa

(strain

R;Stover, C.K.; Pham, X.Q.; Erwin, A.L.; Mizoguchi, S.D.; Warrener, P.; Hickey, adman, S.; Yuan, Y.; Brody, L.L.; Coulter, S.N.; Folger, K.R.; Kas, A.; Larbig, .; Lory, S.; Olson, M.V.
Nature 406, 959-964, 2000 M.J.; Br: K.; Lim,

A;Title: Complete genome sequence of Pseudomonas aeruginosa A;Reference number: A82950; MUID:20437337; PMID:10984043 A;Accession: P83540 PAO1, an opportunistic

pathog

NID

A;Gene: PA0848 C;Superfamily: alkyl hydroperoxide reductase C22 protein; alkyl hydroperoxidase c22 prote

31.8%; Score 325.5; DB 2; 37.1%; Pred. No. 1.6e-22; tive 39; Mismatches 62; Length 199; Indels 23;

VNKQAPDFTAAAVL-GDGSIVDAFQLSSL-----RGKYVVLFFWPLDFTFVCPSEI 54 65

55 IAHNNRMDKFRELGVEVVGVSIDSQFTHHAWRSTPVEKGGIGAVEFTMVADVKHEITRAY AAFSKINDEFEDRDAQILGVSIDSEFAHFQWRA---QHNDLKTLPFFMLSDIKRELSQAA 122

GVLNADGVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQ----SDELCACNW 178 GIEHEDGVALRAS FLI DRAGVVQHQVVNNLPLGREVDEMVRLVEALQFTEEHGEVCPAGW 174

| 171 arch complet | Qy 119 SQAA<br>111 QKAY                                      | Qy 62 PTE1<br> : :<br>Db 51 PSEL   | Qy 3 LLTI<br>Db 1 MVLV  | Query Match<br>Best Local Simil<br>Matches 69; C   | RESULT 15 AB0552 probable peroxidase (im C:Species: Salmonella e A;Note: this species ha C:Deccession: AB0552 R;Parkhill, J: Dougan, th, T: Connerton, P:, S: Moule, S: O'Gaor Nature 413, 848-852, 20 A;Authors: Parry, C:, 20 A;Authors: Parry, C:, 20 A;Title: Complete genom A;Reference number: AB0 A;Accession: AB0552 A;Status: preliminary A;Molecule type: DNA A;Residues: 1-200 <par- a;cross-references:="" a;genetics:="" a;status:="" alkyl="" c;genetics:="" c;superfamily:="" hy<="" stv0440="" th="" uni=""><th>Db 175 RKGQ</th></par->  | Db 175 RKGQ  |
|------------------|--|--|---|--|--|--------------|
|                  | SQAAGVLNAD-GVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQSDEL 173 | PTEIAAPSKLNDEFEDRDAQILGVSIDSEFAHFQWRAQHNDLKTLPFPMLSDIKREL 118<br> : :       : :    : :                : :  : | LLTIGDQFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDEHP-GKWRVVFFWPKDFTFVC 61 :::   : | th 31.8*; Score 325.5; DB 2; Length 200;<br>Similarity 35.6*; Pred. No. 1.6e-22;<br>69; Conservative 39; Mismatches 67; Indels 19; Gaps 5; | RESULT 15 AB0552 probable peroxidase [imported] - Salmonella enterica subsp. enterica serovar Typhi C;Species: Salmonella enterica subsp. enterica serovar Typhi A;Note: this species has also been called Salmonella typhi C;Date: 09-Nov-2001 #sequence_revision 09-Nov-2001 #text_change 18-Nov-2002 C;Accession: AB0552 C;Accession: AB0552 R;Parkhill, J.; Dougan, G.; James, K.D.; Thomson, N.R.; Pickard, D.; Wain, J.; Churcher, C.; Connerton, P.; Cronin, A.; Davis, P.; Davies, R.M.; Dowd, L.; White, N.; Farrar, S.; Moule, S.; O'Gaora, P. Nature 413, 848-952, 2001 A;Authors: Parry, C.; Quail, M.; Rutherford, K.; Simmonds, M.; Skelton, J.; Stevens, K.; A;Title: Complete genome sequence of a multiple drug resistant Salmonella enterica serov A;Reference number: AB0502; MUID:21534947; PMID:11677608 A;Rocession: AB0552 A;Status: preliminary A;Rotatus: preliminary A;Rotatus: preliminary A;Rotatus: 1-200 <pars a;cross-references:="" alkyl="" c22="" c;genetics:="" c;superfamily:="" g;genetics:="" gb:al513382;="" hydroperoxidase="" hydroperoxide="" pid:g16501671;="" pidn:cad08858.1;="" protein;="" protein;<="" reductase="" td="" ty0440="" uniparc:upi000005a247;=""><td>QKGMKASA 185</td></pars> | QKGMKASA 185 |

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OM protein - protein search, using sw model
                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                  Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                              Database :
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Perfect score:
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Gapop 10.0 , Gapext 0.5
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1024
1 MPLLTIGDQFPAYQLTALIG......CNWRKGDPTLDAGELLKASA 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                     March 23, 2006, 04:56:43 ; Search time 49.8737 Seconds (without alignments) 2758.529 Million cell updates/sec
UniProt_05.80:*
1: uniprot_sprot:*
2: uniprot_trembl:*
                                                                                                                                                                                                                                                                    2166443 seqs, 705528306 residues
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Copyright (c) 1993 - 2006 Biocceleration Ltd.
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

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|------------|--------------------------|-------------|-------------|-------------|-------------|--------|-------------|-------------|-------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------|------|
|            | 410.5                    |             |             | 429.5       | 444         | 444    | 453         | 453         | 55          | 564.5      | 565.5      | 66.        | g           | 589         | 590         | 592         | 593         | 619         | 685         | 693         | 878         | 904         | 913         | 920         | 934         | 935         | 943         | 1024        | 1024        | Score            |      |
|            | 40.1                     | •           | •           | ۳           | 43.4        | 43.4   | ٠.          | 4           |             | 5          | 55.2       | 5          | 5           | 7.          | 7.          | .7          | 7.          | 60.4        |             | 67.7        | 5           | 8           | 9           | O           | ŗ           | :           | 92.1        | 100.0       | 100.0       | Query<br>Match I | عد ا |
|            | 182                      |             |             |             |             |        |             |             |             |            | 179 :      |            |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             | 195         |             | Length DB        |      |
| Q7WCW8     | 2 Q7VTI5_BORPE           | Q63T7       | Q62JI       | MXX8D       |             | Q8YCF: | WA480       | Q578J3      | Q5NLQ4      |            |            |            |             | Q4NYM       |             | Q9RN7       | Q9FBP       |             | Q4602       |             | Q57529      |             |             |             |             |             | 08732       | Q7BHK       | Q79CV       | 3 ID             |      |
| BR         | PE<br>B                  | PS          | MA          | so          | JA          | Æ      | SU          | АВ          | ð           | PH         | 11         | PA         | BU          | LT          | AW          | 8           | 8           | ð           | DI          | DI          | MS          | E           | FA          | PA          | PA          | AV          | ¥           | ď           | ВО          |                  | ţ    |
|            | וט ע                     |             | w           |             | Ψ           |        |             |             |             |            |            | œ          |             | Ψ           |             |             | -           |             | u           | w           | Ψ           |             | Q5yt54 1    |             |             | w           |             | Q7bhk8 r    |             | Description      |      |
| bordetella | bordetella<br>bordetella | burkholderi | burkholderi | ralstonia s | bradyrhizob |        | brucella su | brucella ab | zymomonas m | legionella | legionella | legionella | coxiella bu | anaeromyxob | streptomyce | streptomyce | streptomyce | streptomyce | corynebacte | corynebacte | mycobacteri | mycobacteri | nocardia fa | mycobacteri | mycobacteri | mycobacteri | mycobacteri | mycobacteri | mycobacteri | ¦                |      |

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## ALIGNMENTS

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-98295987; PubMed-9634230; DOI=10.1038/31159; COLE S.T., Brosch R., Parkhill J., Garnier T., Churcher C.M., Harris D.E., Gordon S.V., Eiglmeier K., Gas S., Barry C.E. III, Tekaia F., Badcock K., Basham D., Brown D., Chillingworth T., Tekaia F., Badcock K., Basham D., Brown D., Chillingworth T., Connor R., Davies R.M., Devlin K., Feltwell T., Gentles S., Hamlin Holroyd S., Hornsby T., Jagels K., Krogh A., McLean J., Moule S., Murphy L.D., Oliver S., Osborne J., Quail M.A., Rajandream M.A., Rogers J., Rutter S., Seeger K., Skelton S., Squares R. Sulston J.E., Taylor K., Whitehead S., Barrell B.G.; "Deciphering the biology of Mycobacterium tuberculosis from the complete genome sequence.";
                                                                                                                                                                                                                                                                                                                                                                                            NUCLEOTIDE SEQUENCE.
STRAIN-CDC 1551 / Oshkosh;
STRAIN-CDC 1551 / Oshkosh;
MEDLINE=22206494; PubMed=12218036;
MEDLINE=22206494; PubMed=12218036;
DOI=10.1128/JB.18.19.5479-5490.2002;
Pleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O.,
Peterson J.D., DeBoy R.T., Dodson R.J., Gwinn M.L., Haft D.H.,
Hickey E.K., Kolonay J.F., Nelson W.C., Umayam L.A., Ermolaeva M.D.,
Salzberg S.L., Delcher A., Utterback T.R., Weidman J.F., Khouri H.M.,
Salzberg S.L., Delcher A., Bishai W., Jacobs W.R. Jr., Venter J.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted [2]
  oxidative-stress regulatory
isoniazid.";
mol. Microbiol. 17:889-900()
                                                                                      MEDLINE=96123431; PubMed=8596438; 
Deretic V., Philipp W., Dhandayut: 
Garbe T., Heym B., Via L.E., Cole 
Garbe T., Heym B., Via L.E., Cole 
"Mycobacterium tuberculosis is a
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05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
Alkyl hydroperoxidase C (ALKYL HYDROPEROXIDE REDUCTASE
(ALKYL HYDROPEROXIDASE) (SC 1.-.-.) (ALDC).
Name=ahpC; OrderedLocusNames=MT2503, RV2428;
Mycobacterium tuberculosis.
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laboratory strains.";
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Bacteriol. 184:5
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SEQUENCE
MEDLINE=98406038; PubMed=9733688; PubMed=9733688; Pagan-Ramos E., Song J., McFalone M., Mudd M.H., Pagan-Ramos E., Song J., McFalone Characterization "Oxidative stress response and characterization furA-katf loci in Mycobacterium marinum."; J. Bacteriol. 180:4856-4864(1998).

EMBL; AF034861; AAC61301.1; -; Genomic_DNA.
                                                                                                                                                                                                                                                                                                                                                         01-NOV-1998 (TrEMBLrel. 08, Created)
01-NOV-1998 (TrEMBLrel. 08, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
Alkylhydroperoxide reductase.
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                                                                                                                                                           STRAIN-ATCC
                                                                                                                                                                              NUCLEOTIDE SEQUENCE.
                                                                                                                                                                                                                         NCBI_TaxID=1781;
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087323;
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Yuan Y., Barry C.E. III,
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Sherman D.R., Sabo P.J., Hickey M
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BL; AF313459; AAG34172.1; -; Genomic_DNA.
BL; BX882579; CAB03768.1; -; Genomic_DNA.
BL; AF313460; AAG34173.1; -; Genomic_DNA.
BL; AE000516; AAG46800.1; -; Genomic_DNA.
BL; AF313461; AAG34174.1; -; Genomic_DNA.
BL; AF313463; AAG34174.1; -; Genomic_DNA.
BL; U16243; AAG34174.1; -; Genomic_DNA.
BL; U16243; AAG34174.1; -; Genomic_DNA.
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BL; U16243; AAG34175.1; -; Genomic_DNA.
BL; AF313462; AAG34175.1; -; Genomic_DNA.
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BL; AF313462; AAG34175.1; -; Genomic_DNA.
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                                                      "Cloning and expression of the gene for the Avi-3 antigen of
Mycobacterium avium and mapping of its epitopes.";
Infect. Immun. 60:1210-1216(1992).
REMBL; U18263; AAA79917.1; -; Genomic DNA.
REMBL; W18263; AAA79917.1; -; Genomic DNA.
REMBL; M74232; AAA25357.1; -; Genomic DNA.
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01-NOV-1996 (
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Yuan Y., Barry C.E. III, Stover C.K.;
"Disparate responses to oxidative stress in saprophytic
mycobacteria.";
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01-NOV-1996 (TrEMBLrel. 29, Last sequence up
01-FEB-2005 (TrEMBLrel. 29, Last annotation
Alkyl hydroperoxidase C (Antigen).
Name-ahpC; Synonyms=Avi-3;
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SMR; O87323; 3-179.

GO; GO:0016491; F:coxidoreductase activity; GO; GO:0016491; F:peroxidase activity; IEA.

InterPro; IPR000866; AhpC-TSA.

InterPro; IPR012336; Thioredoxin-like.

InterPro; IPR012335; Thioredoxin fold.

Pfam; PF00578; AhpC-TSA; 1.
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MEDLINE=95327698; PubMed=7604044;
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MEDLINE=92175967; Pu
                                           Pfam; PF00578;
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Q73ZL3;
O5-JUL-2004 (TrEMBLrel. 27,
05-JUL-2004 (TrEMBLrel. 27,
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SEQUENCE
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GO; GO:0016491; F:oxidoreductase activity; IEA GO; GO:0004601; F:peroxidase activity; IEA
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Bacteria; Actinobacteridae; Actinomycetales;
Bacteria; Actinobacteriaceae; Mycobacterium;
Corynebacterinae; Mycobacteriaceae; Mycobacterium;
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EMBL/GenBank/DDBJ databases
-; Genomic_DNA.
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                                                                                                                                                                                                                                                                                                                                                                                          Score 934; Lb -
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Pred. No. 5.7e-74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4A9D9C0BF102E61D CRC64;
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HSSP; Q9TZX2; 1E2Y.
SMR; Q9AGF6; 2-179.
SMG; G0:0016491; F:cxidoreductase activity; IE
G0; G0:0016601; F:peroxidase activity; IEA.
InterPro; IPR0102356; Ahpc-TSA.
InterPro; IPR012335; Thioredoxin_fold.
                          NUCLEOTIDE SEQUENCE.
STRAINAIFM 10152;
PubMed=15466710; DOI=10.1073/pnas.0406410101;
PubMed=15466710; DOI=10.1073/pnas.0406410101;
Ishikawa J., Yamashita A., Mikami Y., Hoshino Y., Kur Shiba T., Hattori M.;
"The complete genomic sequence of Nocardia farcinica Proc. Natl. Acad. Sci. U.S.A. 101:14925-14930(2004).
                                                                                                                                                                                                                                                                                                                                                                                                                                 OSYTS4_NOCFA PRELIMINARY; PRT; 195 AA.
OSYTS4;
25-OCT-2004 (TrEMBLrel. 28, Created)
25-OCT-2004 (TrEMBLrel. 28, Last sequence update)
25-OCT-2004 (TrEMBLrel. 28, Last amoutation update)
Putative alkylhydroperoxide reductase.
Name=ahpC; OrderedLocusNames=nfa37890;
Nocardia farcinica.
                                                                                                                                                                                                                                                                                                                                                                    Bacteria; Actinobacteria; Actinol Corynebacterineae; Nocardiaceae;
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submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AF334163; ARX20392.1; -; Genomic_DNA.
HSSP; O9TZX2; 1E2Y.
SMR; O9AGF6; 2-179.
GO; GO:0016491; F:oxidoreductase activity; IEA.
GO; GO:0004601; F:peroxidase activity; IEA.
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                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=37329;
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           AP006618;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MPLLTIGDQFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDEHPGKWRVVFFWPKDFTFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GDPTLNATELLKASA 195
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CPTEIATFGKLNDEFEDRDAQVLGVSIDSEFVHFNWRAQHEDLKNLFFPMLSDIKRELSL
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       1. Sci. U.S.A.
BAD58637.1; -;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                89.8%;
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                                                                                                                                                                                                                                                                                                                                                                        Actinobacteridae; Actinomycetales; iaceae; Nocardia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
Last sequence up
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Pred. No. 1.2e-72;
       Genomic
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       DNA
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                                                                               IFM 10152.";
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Best Local
Query Match
                                                                                              HSSP; Q9TZX2; 1E2Y.

SMR; Q9CBF5; 3-179.

Leproma; ML2042; -.

GO; GO:0016491; F:oxidoreductase activity; IE,

GO; GO:0004601; F:peroxidase activity; IEA.

InterPro; IPR000866; AhpC-TSA.

InterPro; IPR012335; Thioredoxin-like.

InterPro; IPR012335; Thioredoxin-fold.

Pfam; PF00578; AhpC-TSA; 1.
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GO; O0:0016491; F:oxidoreductase activity; 1
GO; GO:0004601; F:peroxidase activity; 1
InterPro; IPR010366; AhpC-TSA.
InterPro; IPR012336; Thioredoxin-like.
Pfam; PP00578; AhpC-TSA; 1.
Complete proteome.
SEQUENCE 195 AA; 21456 MW; 6B3D2F9D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=21128732; PubMed=11234002; DOI=10.1038/35059006; Cole S.T., Eiglmeier K., Parkhill J., James K.D., Thomson N.R., Wheeler P.R., Honore N., Garnier T., Churcher C.M., Harris D.E., Mungall K.L., Basham D., Brown D., Chillingworth T., Connor R., Mungall K.L., Basham D., Brown D., Chillingworth T., Fraser A., Hamiln N., Holroyd S., Hornsby T., Juthoy S., Feltwell T., Fraser A., Moule S., Holroyd S., Hornsby T., Jagels K., Lacroix C., Maclean J., Moule S., Murphy L.D., Oliver K., Quail M.A., Rajandream M.A., Rutherford K.M., Rutter S., Seeger K., Simon S., Simmonds M., Skelton J., Squares R., Squares S., Stevens K., Taylor K., Whitehead S., Woodward J.R.,
                                                                             Pfam; PF0
Complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
Alkyl hydroperoxide reductase.
Alkyl hydroperoxide reductase.
Name-ahpC; OrderedLocusNames=ML2042;
                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                      "Massive gene decay in the leprosy bacillus.", Nature 409:1007-1011(2001).

EMBL, AL583924; CAC30997.1; -; Genomic_DNA.
PIR; E87164; E87164.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Squares S., S
Barrell B.G.;
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9CBF5
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GO:0016491; F:oxidoreductase activity; IEA.
GO:0004601; F:peroxidase activity; IEA.
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                                                      195
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                                                      <u>Α</u>
                                                      21497 MW;
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88.3%;
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Pred. No. 4.
Score
                                                      DBB68152F813CEA1 CRC64;
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904;
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<u>ب</u>
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Matches 169; Conserva
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Q57529;
Q1-NOV-1996 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=mc2 155; PLASMID=pDD881;
MEDLINE=9625622; PLDMed=8655566;
Dhandayuthapani S., Zhang Y., Mudd M.H., Deretic V.;
POxidative stress response and its role in sensitivity to isoniazid in mycobacteria; characterization and inducibility of ahpC by peroxides in Mycobacterium smegmatis and lack of expression in M. aurum and M. tuberculosis.;
J. Bacteriol. 178.3641-3649(1996).
EMBL; U31978; AAC44139.1; -; Genomic_DNA.
EMBL; U31978; AAC44148.1; -; Genomic_DNA.
EMBL; D31978; AAC44148.1; -; Genomic_DNA.
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                                                                                                                                                                                                                                                                                                                                                                                                     GO; GO:0016491; F:oxidoreductase activity; GO; GO:0004601; F:peroxidase activity; IEA. InterPro; IPR000866; Ahpc-TSA. InterPro; IPR012335; Thioredoxin-like. InterPro; IPR012335; Thioredoxin-fold.
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                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
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                     CPTEIAAFSKINDEFEDRDAQIIGVSIDSEFAHFOWRAQHNDLKTLPFPMISDIKRELSQ
                                                                                                                                                                                                                      MPLLTIGDOFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDEHPGKWRVVFFWPKDFTFV
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                                                                                                                                                                                   MALLTIGDQFPEYDLTAVVGGDLSKVDAKQFDDYFTRVTSKDYEGKWRIIFFWFKDFTFV
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82.2%;
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Pred. No. 5.8e-69;
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2; Mismatches
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                                                                                                                                        Q46025_CORDI PRELIMINARY;
Q46025;
Q16025;
Q1-NOV-1996 (TrEMBLrel. 01.
01-NOV-1996 (TrEMBLrel. 01.
01-JUN-2001 (TrEMBLrel. 17.
    Ol-Jun-2001.
Iron repressible polypeptique.
Iron repressible polypeptique.
Name=dirA;
Corynebacterium diphtheriae.
Corynebacterium diphtheriae.
Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Bacteria; Actinobacteria; Actinobacteridae; Corynebacterium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "The complete genome sequence and analysis of diphtheriae NCTC13129.";
Nucleic Acids Res. 31.6517
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05-JUL-2004 (TrEMBLrel. 27, Last sequence up
05-JUL-2004 (TrEMBLrel. 27, Last sequence up
05-JUL-2004 (TrEMBLrel. 27, Last annotation
Iron repressible polypeptide (Putative reduc
Name-dirA; OrderedLocusNames=DIP1420;
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STRAIN=Biotype gravis / NCTC 13129;
MEDLINE=22965443; PubMed=14602910; DOI=10.1093/nax/gkg874;
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InterPro; IPR012338; Thioredoxin-like Pfam; PF00578; AhpC-TSA; 1.
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96 (TrEMBLrel. 01, Last s
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Pred. No. 1.1e-52;
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Best Local S
                                                                                                BMBL; AF127576; AAD33340.1; -; Genomic_DNA HSSP; O9TZX2; 1E2Y.
GO; GO:0016491; F:oxidoreductase activity; GO; GO:0004601; F:peroxidase activity; IEA InterPro; IPR000866; AhpC-TSA. InterPro; IPR012336; Thioredoxin-like. InterPro; IPR012335; Thioredoxin fold. Pfam; PF00578; AhpC-TSA; 1
                                                                                                                                                                                                                                                                                                     Ramachandran S., Magnuson T.S., Crawford D.L.;
"Isolation and analysis of three percyide sensor regulatory go
homologs ahpC, ahpX and oxyR in Streptomyces viridosporus T7A
lignocellulose degrading actinomycete.";
DNA Seq. 11:51-60(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1999 (TrEMBLrel. 12, Created)
01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9X5V0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Cloning of a Corynebacterium diphtheriae iron-repressible gene that shares sequence homology with the AhpC subunit of alkyl hydroperoxide reductase of Salmonella typhimurium.";

J. Bacteriol. 177:3512-3517(1995).

EMBL; U18620; AAA96946.1; -; Genomic_DNA.

HSSP; Q9TZX2; 1E2Y.

G0; G0:0016491; F:oxidoreductase activity; IEA.
G0; G0:0016491; F:oxidoreductase activity; IEA.
InterPro; IPR012336; Thioredoxin-like.
InterPro; IPR012336; Thioredoxin-like.
InterPro; IPR012336; Thioredoxin-fold.

Ffam. PR017335; Thioredoxin-fold.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales; Streptomycineae; Streptomycetaceae; Streptomyces.
                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Streptomyces viridosporus.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Alkyl hydroperoxide reductase.
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ilarity 67.4%;
Conservative 2
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3 AA; 22312
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AA; 21700
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Pred. No. 5.3e-52
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Pred.
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619;
No. 3.
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  DB 2;
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                        Length 194;
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Q9FBP5 STRCO 1
Q9FBP5;
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                                                                                                                                                                                                                                                                                                                                 "Complete genome sequence of the model action A32.";
Nature 417:141-147(2002).
Nature 417:141-147(2002).
SMBL; AL939122; CAC05877.1; -; Genomic_DNA.
HSSP; P32119; 1QMV.
GO; GO:0016491; F::oxidoreductase activity;
GO; GO:0016491; F::peroxidase activity; IEA.
                                                                                                                                                                                                                                          SEQUENCE 184 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alkyl hydroperoxide reductase OrderedLocusNames=SCO5032; ORI Streptomyces coelicolor.
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STRAIN=A3(2) / M145;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hopwood D.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=21996410; PubMed=12000953; DOI=10.1038/417141a;
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Streptomycineae; Streptomycetaceae; Streptomyces.
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InterPro; IPR012336; Thioredoxin-like.
InterPro; IPR012335; Thioredoxin_fold.
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                                                 TETAAFGKLINDEFADRDAQTLGFSGDSEFVHHAWRKDHPDLTDLPFPMLADSKHELMRDL
                                                                                                                                          LLTIGDQFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDEHPGKWRVVFFWPKDFTFVCP
                                                                           TEIAAFSKLNDEFEDRDAQILGVSIDSEFAHFQWRAQHNDLKTLPFPMLSDIKRELSQAA
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                                                                                                                                                                             Conservative
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61.4%;
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                                                                                                                                                                                           Score 593; DB 2;
Pred. No. 5.9e-44;
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HSSP; P32119; 1QMV.
GO; GO:0016491; F:oxidoreduc
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Submitted (SEP-1999) t
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Streptomycineae; Streptomycetaceae; Streptomyces.
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Bacteria; Actinobacteria; Act
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Last annotation update)
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Pred. No. 7.2e-44;
14; Mismatches 51
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HSSP; Q9TZX2; 1E2Y.
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STRAIN=MA-4680 / ATCC 31267 / NCIMB 12804 / NRRL 8165;

MEDLINE-21477403; PubMed-11572948; DOI=10.1073/pnas.211433198;

Omura S., Ikeda H., Ishikawa J., Hanamoto A., Takahashi C.,

Shinose M., Takahashi Y., Horikawa H., Nakazawa H., Osonoe T.,

Kikuchi H., Shiba T., Sakaki Y., Hattori M.;

"Genome sequence of an industrial microorganism Streptomyces

avermitilis: deducing the ability of producing secondary

metabolites.";
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SEQUENCE 184 AA;
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STRALN=MA-4680 / ATCC 31267 / NCIMB 12804 / NRRL 8165;
MEDLINE=22608306; PubMed=12692562; DOI=10.1038/nbt820;
Ikeda H., Ishikawa J., Hanamoto A., Shinose M., Kikuchi Ikeda H., Ishikawa J., Omura S.;
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Streptomycineae; Streptomycetaceae; Streptomyces.
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173
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BA000030; BAC70943.1; -; Genomic_DNA.
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Pred. No. 1.1e-43;
11; Mismatches 48
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Maximum Match 100%
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Maximum DB
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1. /cgn2_6/ptodata/1/iaa/5_COMB.pep:*

2. /cgn2_6/ptodata/1/iaa/6_COMB.pep:*

3. /cgn2_6/ptodata/1/iaa/H_COMB.pep:*

4. /cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*

5. /cgn2_6/ptodata/1/iaa/RE_COMB.pep:*

6. /cgn2_6/ptodata/1/iaa/backfiles1.pep:*
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| 2 US-08-798-841-26<br>2 US-09-252-991A-29692<br>US-09-489-039A-13084<br>1 US-08-467-265-17<br>2 US-09-407-891-17<br>2 US-09-38-092-1055<br>2 US-09-949-016-8377<br>1 US-08-467-265-16<br>2 US-09-949-016-8377<br>1 US-08-467-265-16<br>2 US-09-407-891-16<br>2 US-09-407-891-16<br>2 US-09-270-767-46784<br>2 US-09-270-767-46784<br>2 US-09-949-016-1039<br>2 US-09-949-016-10249<br>2 US-09-949-016-10249<br>2 US-09-949-016-10249  | -08-798-841-26 -09-252-991A-29692 -09-489-039A-13084 -08-467-265-17 -08-467-265-17 -08-467-265-17 -09-949-016-8377 -09-949-016-8377 -09-949-016-8377 -09-949-016-8377 -09-949-016-8377 -09-949-016-8377 -09-949-016-636 -09-375-907-4 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-90 | 199             | 258                 | 256                | 256                | 248                 | 257      | 257              | 257              | 257              | 206                | 198                | 199         | 199              | 199              | 205                  | 244                  | 206              |   |
| US-08-798-841-26<br>US-09-252-991A-29692<br>US-09-489-039A-13084<br>US-08-467-265-17<br>US-08-467-265-17<br>US-09-497-891-17<br>US-09-949-016-8377<br>US-09-949-016-8377<br>US-09-949-016-8377<br>US-09-949-016-07-265-16<br>US-09-407-891-16<br>US-09-775-977-5<br>US-09-949-016-0767-0767-0767-0767-0767-0767-0767-   | -08-798-841-26 -09-252-991A-29692 -09-489-039A-13084 -08-467-265-17 -08-467-265-17 -08-467-265-17 -09-949-016-8377 -09-949-016-8377 -09-949-016-8377 -09-949-016-8377 -09-949-016-8377 -09-949-016-8377 -09-949-016-636 -09-375-907-4 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-907-9 -09-375-90 | N               | N                   | N                  | N                  | N                   | N        | N                | N                | _                | N                  | Ŋ                  | N           | N                | ۳,               | N                    | N                    | N                |   |
|   |  | US-09-375-907-4 | US-09-949-016-10249 | US-09-949-016-6760 | US-09-538-092-1039 | US-09-270-767-46784 | -375-907 | US-09-407-891-16 | US-08-467-265-16 | US-08-467-265-16 | US-09-949-016-8377 | US-09-538-092-1055 | -09-407-891 | US-08-467-265-17 | US-08-467-265-17 | US-09-489-039A-13084 | US-09-252-991A-29692 | US-08-798-841-26 |   |

ALIGNMENTS

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US-08-311-731A-84
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US-08-311-731A-84
                                 TELEPAX: 617/720-2441
INFORMATION FOR SEQ ID NO: 84
SEQUENCE CHARACTERISTICS:
LENGTH: 195 amino acids
TYPE: amino acid
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: YES
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 84, Application US/08311731A Patent No. 6583266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:

APPLICANT: SMITH, DOUGLAS

APPLICANT: MAO, JEN-I

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES

TITLE OF INVENTION: RELATING TO MYCOBACTERIUM TUBERCULOSIS AND LAPRAE FOR

TITLE OF INVENTION: DIAGNOSTICS AND THERAPEUTICS

NUMBER OF SEQUENCES: 411
                                                                                                                                                                                                                                   CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: GATES, EDWARD R.
REGISTRATION NUMBER: 31,616
REFERENCE/DOCKET NUMBER: C004
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617/720-3500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
ADDRESSEE: WOLF, GREENFIELD & SACKS, P.C.
                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: FILING DATE:
                      ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY:
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                      MYCOBACTERIUM LEPRAE
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Query Match
Best Local Similarity
Matches 167; Conserv

Conservative

87.7%; Score 898; DB 2; 1 85.6%; Pred. No. 1.6e-100;

Length 195; Indels

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Gaps

14; Mismatches

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; Sequence 10665, Application US/09902540
; Patent No. 6833447
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Goldman, Barry S.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: Myysococcus xanthus Genome Sequences and Uses Thereof FILE REFERENCE: 38-10(15849)8
CURRENT APPLICATION NUMBER: US/09/902,540
CURRENT FILING DATE: 2001-07-10
PRIOR APPLICATION NUMBER: 60/217,883
PRIOR APPLICATION NUMBER: 60/217,883
PRIOR FILING DATE: 2000-07-10
NUMBER OF SEQ ID NOS: 16825
LENGTH: 184
TYPE: PRT
                                                                                                                                                                                                  Sequence 95, Application US/09551974A Patent No. 6500437
                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 51.2%; Score 524.5; DB Best Local Similarity 54.3%; Pred. No. 3e-55; Matches 100; Conservative 25; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
          APPLICANT: Reed, Steven G.
APPLICANT: Campos-Neto, Antonio
APPLICANT: Webb, John R.
APPLICANT: Webb, John R.
APPLICANT: Skeiky, Yasir A.W.
APPLICANT: Skeiky, Yasir A.W.
TITLE OF INVENTION: LEISHMANIA ANTIGENS FOR USE IN THE
TITLE OF INVENTION: THERAPY AND DIAGNOSIS OF LEISHMANIASIS
FILE REFERENCE: 210121.420C5
    CURRENT APPLICATION
                                                                                                                                                                                                                                                                                                                                                                                                      113 GILHKEEGVALRATFIADPEGIIRHVTVNDLSVGRNVSETIRTLDALQTDELCPCNWTKG 172
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TEIAAFSKLNDEFEDRDAQILGVSIDSEFAHFQWRAQHNDLKTLPFPMLSDIKRELSQAA 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MLTVGDKIPNFKVKATV-----SLEKGKEFQDITNETFKGKWLVLFAWPKDFTFICP
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NUMBER: US/09/551,974A
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APPLICANT:
APPLICANT:
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CURRENT APPLICATION NUMBER: US/09/565,501A
CURRENT FILING DATE: 2000-05-05
NUMBER OF SEQ ID NOS: 112
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 95
LENGTH: 982
TYPE: PRT
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NUMBER OF SEQ ID NOS: 101
SOFTWARE: FASTSEQ for Windows V
SEQ ID NO 95
LENGTH: 982
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                                                                                                                                                                                                                                                                                                                 Query Match
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APPLICANT:
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FEATURE:
OTHER INFORMATION: Fusion (poly-protein) constructs
OTHER INFORMATION: Leishmania antigens
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TYPE: PRT
ORGANISM: Artificial Sequence
PEATURE:
OTHER INFORMATION: Fusion (poly-protein)
OTHER INFORMATION: Leishmania antigens
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Skeiky, Yasir A.W.
Bhatia, Ajay
Coler, Rhea
Peter Probst
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IAFSDSVSRFNELNCEVLACSIDSEYAHLQWTLQDRKKGGLGTWAIPMLADKTKSIARSY 123
                                                                                                                                                                       IGDQFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDEHPGKWRVVFFWPKDFTFVCPTEI
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Campos-Neto, Antonio
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                                                                                                                                                                                                                                                    34.2%; Score 350.5; DB: 39.4%; Pred. No. 5.2e-33 tive 35; Mismatches 6
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Pred. No. 5.2e-33
5; Mismatches 6
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APPLICANT: Probst, Peter
TITLE OF INVENTION: LEISHMANIA ANTIGENS FOR USE IN THE
TITLE OF INVENTION: THERAPY AND DIAGNOSIS OF LEISHMANIAS!
FILE REFERENCE: 210121.420C7
CURRENT APPLICATION NUMBER: US/09/639,206A
CURRENT FILING DATE: 2000-08-14
NUMBER OF SEO ID NOS: 112
SOPTWARE: PastSEQ for Windows Version 4.0
SEQ ID NO 95
LENGTH: 982
TYPE: PRT
ORGANISM: Artificial Sequence
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                                          APPLICANT: Reed, Steven G.
APPLICANT: Campos Neto, Ani
APPLICANT: Webb, John R.
APPLICANT: Dillon, Davin C
APPLICANT: Skeiky, Yasir A
                                                                                                                               GENERAL INFORMATION:
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                                                                                                                                           Sequence 95, Application US/09874923 Patent No. 6638517
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APPLICANT: Campos-Neto, Antonio
                              APPLICANT:
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APPLICANT:
           APPLICANT
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o. 6613337
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Skeiky, Yasir A.W.
Shatia, Ajay
Coler, Rhea
           Dillon, Davin C.
Skeiky, Yasir A.W.
Bhatia, Ajay
Coler, Rhea
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                                                                                              Antonio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        35;
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CURRENT APPLICATION NUMBER: US/09/874,923
CURRENT FILING DATE: 2001-06-04
NUMBER OF SEQ ID NOS: 122
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 95
LENGTH: 982
TYPE: PRT
TYPE: PRT
ORGANISM: Artificial Sequence
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Best Local Similarity
Thes 74; Conserve
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US-09-551-974A-97
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                                                                                                                                                                                                                                                                                                      ; SEQ ID NO 97
; LENGTH: 1427
; TYPE: PRT
                                                                                                                       Query Match
Best Local S
Matches 74
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Patent No.
                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/09/551,974A
CURRENT FILING DATE: 2000-04-14
NUMBER OF SEQ ID NOS: 101
                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Dillon, Davin C.
APPLICANT: Skeiky, Yasir A.W.
TITLE OF INVENTION: LEISHMANIA ANTIGENS FOR USE IN THE
TITLE OF INVENTION: THERAPY AND DIAGNOSIS OF LEISHMANIASIS
FILE REFERENCE: 210121.420C5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Reed, Steven
APPLICANT: Campos-Neto,
APPLICANT: Webb, John R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: LEISHMANIA ANTIGENS FOR USE IN THE TITLE OF INVENTION: THERAPY AND DIAGNOSIS OF LEISHMAN: FILE REFERENCE: 210121.420C8
                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE:
                                                                                                                                                                                                                      ORGANISM: Artificial Sequence FEATURE: OTHER INFORMATION: Pusion (poly-protein) constructs comprising multiple OTHER INFORMATION: Leishmania antigens
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                                                                                                                       Local Similarity
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AAFSKLNDEFEDRDAQILGVSIDSEFAHFQWRAQ---HNDLKTLPFPMLSDIKRELSQAA 122
                                                                 IGDQFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDEHPGKWRVVFFWPKDFTFVCPTEI 65
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                                          INSPAPSFEEVALM------PNGSFKKISLSSYKGKWVVLFFYPLDFTFVCPTEV
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                                                                                                                       34.2%; Score 350.5; DB 2; llarity 39.4%; Pred. No. 9.3e-33; Conservative 35; Mismatches 60;
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RESULT 9
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CURRENT FILING DATE: 2000-05-05
NUMBER OF SEQ ID NOS: 112
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 97
LENGTH: 1427
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GENERAL INFORMATION:
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Best Local Similarity
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APPLICANT:
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APPLICANT:
                               APPLICANT: Reed, Steven G.
APPLICANT: Campos-Neto, A
APPLICANT: Webb, John R.
APPLICANT: Dillion, Davin
   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: LEISHMANIA ANTIGENS FOR USE IN THE TITLE OF INVENTION: THERAPY AND DIAGNOSIS OF LEISHMANIASIS FILE REFERENCE: 210121.420C6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OTHER INFORMATION: Fusion (poly-protein) constructs comprising multiple OTHER INFORMATION: Leishmania antigens
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184 WKKGAPTM 191
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Skekky, Yasir A.W.
Bhatia, Ajay
Coler, Rhea
Peter Probst
Campos-Neto, Anton:
Webb, John R.
Dillion, Davin C.
Skeiky, Yasir A.W.
Bhatia, Ajay
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                                                                 Antonio
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GENERAL INFORMATION:
APPLICANT: Reed, Steven G.
APPLICANT: Reed, Steven G.
APPLICANT: Campos-Neto, Antonio
APPLICANT: Genebo, John R.
APPLICANT: Dillon, Davin C.
APPLICANT: Dillon, Davin C.
APPLICANT: Bhatia, Ajay
APPLICANT: Skeiky, Yasir A.W.
APPLICANT: Coler, Rhea
APPLICANT: Drobst, Peter
APPLICANT: Probst, Peter
APPLICANT: Probst, Peter
APPLICANT: Brannon, Mark
TITLE OF INVENTION: LEISHMANIA ANTIGENS FOR USE IN THE
TITLE OF INVENTION: THERAPY AND DIAGNOSIS OF LEISHMAN:
FILE REFERENCE: 2011.420C8
CURRENT APPLICATION NUMBER: US/09/874,923
CURRENT FILING DATE: 2001-06-04
NUMBER OF SEQ ID NOS: 122
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 97
LENGTH: 1427
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TITLE OF INVENTION: LEISHMANIA ANTIGENS FOR USE IN THE
TITLE OF INVENTION: THERAPY AND DIAGNOSIS OF LEISHMANIASIS
FILE REFERENCE: 2.10121.420C7
CURRENT APPLICATION NUMBER: US/09/639,206A
CURRENT FILING DATE: 2000-08-14
NUMBER OF SEQ ID NOS: 112
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 97
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  Matches
                      Best Local Similarity
                                        Query Match
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                                                                                                   FEATURE: OTHER INFORMATION: Fusion (poly-protein) OTHER INFORMATION: Leishmania antigens
                                                                                                                                                                                             LENGTH: 1427
TYPE: PRT
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  Conservative
34.2%; Score 350.5; DB 2
39.4%; Pred. No. 9.3e-33;
tive 35; Mismatches 60
                                                                                                                              constructs
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LENGTH: 1464
TYPE: PRT
RCANISM: Homo sapiens
US-10-012-896-1008
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US-10-012-896-1008
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TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY AND
TITLE OF INVENTION: DIAGNOSIS OF PROSTATE CANCER
FILE REFERENCE: 210121.427C27
CURRENT APPLICATION NUMBER: US/10/012,896
CURRENT FILING DATE: 2001-12-10
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184
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                                                                                                                                                                                               INSPAPSFEEVALM------PNGSFKKISLSSYKGKWVVLFFYPLDFTFVCPTEV
                                                                                                                                                                                                                           IGDQFPAYQLTALIGGDLSKVDAXQPGDYFTTITSDEHPGKWRVVFFWFXDFTFVCPTEI
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Vedvick, Thomas
Carter, Darrick
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Retter, Marc W.
Stolk, John A.
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Mitcham, Jennifer L.
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Wantanabe, Yoshihiro
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Vinals de Bassols, Carlota
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Hepler, William T.
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                                                                                                                                                                                                                                                                                                 34.2%; Score 350.5; DB 2; ilarity 39.4%; Pred. No. 9.7e-33; Conservative 35; Mismatches 60;
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US-09-565-501A-96
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SEQ ID NO 96
LENGTH: 1641
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Matches
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GENERAL INFORMATION:
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APPLICANT: Webb, John R.
APPLICANT: Billon, Davin C.
APPLICANT: Skeiky, Yasir A.W.
TITLE OF INVENTION: LEISHMANIA ANTIGENS FOR USE IN THE
TITLE OF INVENTION: THERAPY AND DIAGNOSIS OF LEISHMANIASIS
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Patent No. 6500437
                                                                      APPLICANT: Reed, Steven G.
APPLICANT: Campos-Neto, Antonio
APPLICANT: Webb, John R.
APPLICANT: Webb, John R.
APPLICANT: Dillion, Davin C.
APPLICANT: Skeiky, Yasir A.W.
APPLICANT: Bhatia, Ajay
APPLICANT: Coler, Rhea
APPLICANT: Coler, Rhea
APPLICANT: Peter Probst
TITLE OF INVENTION: LEISHMANIA ANTIGENS FOR USE IN THE
TITLE OF INVENTION: THERAPY AND DIAGNOSIS OF LEISHMANIASIS
TILE REFERENCE: 210121.4206
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CURRENT APPLICATION NUMBER: US/09/551,974A
CURRENT FILING DATE: 2000-04-14
CURRENT APPLICATION NUMBER: US/09/565,501A
CURRENT FILING DATE: 2000-05-05
NUMBER OF SEQ ID NOS: 112
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les 74; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      124 GVLEESQGVAYRGLFIIDPHGMLRQITVNDMPVGRSVEEVLRLLEAFQFVEKHGEVCPAN 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     123 GVL-NADGVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQ-----SDELCACN 177
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ilarity 39.4%;
Conservative 3
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Pred. No. 1.2e-32;
5; Mismatches 60;
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APPLICANT: Skeiky, Yasir A.W.

APPLICANT: Bhatia, Ajay

APPLICANT: Bhatia, Ajay

APPLICANT: Coler, Rhea

APPLICANT: Probst, Peter

ITILE OF INVENTION: LEISHMANIA ANTIGENS FOR USE IN THE

ITILE OF INVENTION: THERAPY AND DIAGNOSIS OF LEISHMANIASIS

FILE REFERENCE: 210121.420C7

CURRENT APPLICATION NUMBER: US/09/639,206A

CURRENT FILING DATE: 2000-08-14

NUMBER OF SEG ID NOS: 112

SOFTWARE: FastSEQ for Windows Version 4.0

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US-09-639-206A-96
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US-09-639-206A-96
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APPLICANT: Campos-Neto, Antonio
APPLICANT: Webb, John R.
APPLICANT: Dillion, Davin C.
APPLICANT: Skeiky, Yasir A.W.
APPLICANT: Skeiky, Yasir A.W.
APPLICANT: Bhatia, Ajay
APPLICANT: Coler, Rhea
APPLICANT: Coler, Rhea
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Matches
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SEQ ID NO 96
LENGTH: 1641
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
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-09-565-501A-96
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TYPE: PRT
ORGANISM: Artificial Sequence
PEATURE:
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                                                                                                                                                                                                      h 34.2%; Score 350.5; DB 2; Similarity 39.4%; Pred. No. 1.2e-32; 74; Conservative 35; Mismatches 60;
                                          IAFSDSVSRFNELNCEVLACSIDSEYAHLQWTLQDRKKGGLGTMAIPMLADKTKSIARSY 123
                                                                         AAFSKLNDEFEDRDAQILGVSIDSEFAHFQWRAQ---HNDLKTLPFPMLSDIKRELSQAA 122
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  GVL-NADGVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQ----SDELCACN 177
                                                                                                                        INSPAPSFEEVALM------PNGSPKKISLSSYKCKWVVLFFYPLDFTFVCPTEV 63
                                                                                                                                                          IGDQFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDEHPGKWRVVFFWPKDFTFVCPTEI 65
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; Pred. No. 1.2e-32;
35; Mismatches 60;
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Search completed: March 23, Job time: 13.3997 secs
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US-09-874-923-96
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CURRENT FILING DATE: 2001-06-04
NUMBER OF SEQ ID NOS: 122
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 96
LENGTH: 1641
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APPLICANT: Campos Neto,
APPLICANT: Webb, John R.
APPLICANT: Dillon, Davir
APPLICANT: Skeiky, Yasir
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Dillon, Davin C.
APPLICANT: Skeiky, Yssir A.W.
APPLICANT: Bhatia, Ajay
APPLICANT: Coler, Rhea
APPLICANT: Probst, Peter
APPLICANT: Brannon, Mark
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APPLICANT: Brannon, Mark
APPLICANT: BRANNON DIAGNOSIS OF LEISH
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Artificial Sequence FEATURE:
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184 WKKGAPTM 191
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                                                                               WKKGAPTM 191
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Pred. No. 1.2e-32;
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Result
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|   | US-10-732-923-21206 | US-10-732-923-21153 | US-10-732-923-21152 | US-10-732-923-20977 | US-10-732-923-21049 | US-10-369-493-18827 | US-10-732-923-21042 | US-10-732-923-21284 | US-10-369-493-20936 | US-10-732-923-21268 | US-10-732-923-21100 | US-10-732-923-21084 | US-10-369-493-17716 | US-10-732-923-21229 | US-10-732-923-21104 | US-10-282-122A-50913 | US-10-732-923-20992 | US-10-732-923-21109 |
| 2 | Seguence 2          | Seguence 2          | Sequence 2          | Sequence 2          | Sequence 2          | Sequence 1          | Sequence 2          | Sequence 2          | Sequence 2          | Seguence 2          | Sequence 2          | Sequence 2          | Sequence 1          | Sequence 2          | Sequence 2          | Sequence :           | Sequence 2          | Sequence 2          |
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## ALIGNMENTS

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Sequence 62742, Application US/10282122A
Publication No. US20040029129A1
GENERAL INFORMATION
APPLICANT: Wang, Liangsu
APPLICANT: Wang, Liangsu
APPLICANT: Wang, Liangsu
APPLICANT: Tawaka, Waith
APPLICANT: Tawaka, John
APPLICANT: Tawaka, John
APPLICANT: Yamanoto, Robert
APPLICANT: Yamanoto, Robert
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PRIOR APPLICATION NUMBER: 60/201,078
PRIOR FILING DATE: 2000-03-21
PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: 60/201,335
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Publication No. US20040029129A1
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                                                                                                                                                 Remaining Prior Application data removed - NUMBER OF SEQ ID NOS: 78614 SOFTWARE: PatentIn version 3.1
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APPLICANT: Forsyth, R.
APPLICANT: Forsyth, R.
APPLICANT: Ku, H.
TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
FILE REFERENCE: ELITRA.034A
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT FILING DATE: 2003-02-20
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
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                                                                TYPE: PRT ORGANISM: Mycobacterium tuberculosis
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FILLING DATE: 2001-02-09
APPLICATION NUMBER: 60/269,308
FILING DATE: 2001-02-16
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APPLICATION NUMBER: 60/253,625
FILING DATE: 2000-11-27
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FILING DATE: 2000-09-06
APPLICATION NUMBER: 60/230,347
FILING DATE: 2000-09-09
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FILING DATE: 2000-12-22
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Carroto, Robert
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Malone, Cheryl
Haselbeck, Robert
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Sequence 21, Application US/10332512A Publication No. US20040180056A1 GENERAL INFORMATION:
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SOFTWARE: PatentIn version 3.2
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PRIOR FILING DATE: 2002-07-13
PRIOR APPLICATION NUMBER: US 60/401,725
PRIOR FILING DATE: 2002-08-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILE REFERENCE: SSI5AUSA
CURRENT APPLICATION NUMBER: US/10/617,038
CURRENT FILING DATE: 2003-07-11
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APPLICANT: Rosenkrands, Ida
APPLICANT: Stryhn, Anette
TITLE OF INVENTION: Therapeutic TB Vaccine
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Pred. No. 3.2e-103;
Mismatches 0;
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APPLICANT: ORME, IAN M.
APPLICANT: BELISLE, John T.
TITLE OF INVENTION: MID-LIFE
FILE REFERENCE: 38861-186292

VACCINE AND METHODS FOR BOOSTING ANTI-MYCOBACTERIAL IMMUR

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US-10-732-923-21281
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GENERAL INFORMATION:

APPLICANT: Edgerton, Michael D

TITLE OF INVENTION: TRANSGENIC PLANTS WITH IMPROVED PHENOTYPES

FILE REFERENCE: 38-15(52796)C

CURRENT APPLICATION NUMBER: US/10/732,923

CURRENT FILING DATE: 2003-12-10

PRIOR APPLICATION NUMBER: 10/310,154

PRIOR FILING DATE: 2002-12-04

NUMBER OF SEQ ID NOS: 24149

SEQ ID NO 21281

LENGTH: 195
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TYPE: PRT
ORGANISM: Mycobacterium tuberculosis
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                 GDPTLDAGELLKASA 195
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GDPTLDAGELLKASA 195
                                                                      AAGVLNADGVADRVTFIVDPNNBIQFVSATAGSVGRNVDEVLRVLDALQSDELCACNWRK 180
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Pred. No. 3.
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3.2e-103;
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APPLICANT: Carr, Grant
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
APPLICANT: Yorsyth, R.
APPLICANT: Xu, H.
TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
FILE REFERENCE: ELITEA.034A
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT APPLICATION NUMBER: 60/191,078
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR PILING DATE: 2000-05-26
PRIOR PILING DATE: 2000-05-26
PRIOR PILING DATE: 2000-05-26
PRIOR PILING DATE: 2000-05-26
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Publication No. US20050108791A1
GENERAL INFORMATION:
APPLICANT: Edgerton, Michael D
TITLE OF INVENTION: TRANSGENIC PLANTS WITH IMPROVED PHENOTYPES
FILE REFERENCE: 38-15 (52796) C
CURRENT APPLICATION NUMBER: US/10/732,923
CURRENT FILING DATE: 2003-12-10
PRIOR APPLICATION NUMBER: 10/310,154
PRIOR APPLICATION NUMBER: 10/310,154
PRIOR FILING DATE: 2003-12-04
NUMBER OF SEQ ID NOS: 24149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Ohlsen, Kari
APPLICANT: Zyskind, Judith
APPLICANT: Wall, Daniel
APPLICANT: Wall, Daniel
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LENGTH: 195
TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Haselbeck, Robert
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Pred. No. 2.3e-94;
7; Mismatches 11
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TITLE OF INVENTION: TRANSGENIC PLANTS WITH IMPROVED PHENOTYPES
FILE REFERENCE: 38-15(52796)C
CURRENT APPLICATION NUMBER: US/10/732,923
CURRENT FILING DATE: 2003-12-10
PRIOR APPLICATION NUMBER: 10/310,154
PRIOR APPLICATION NUMBER: 10/310,154
PRIOR FILING DATE: 2002-12-04
NUMBER OF SEQ ID NOS: 24149
SEQ ID NO 21016
LENGTH: 195
TYPE: PRT
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Publication No. US20050108791A1
GENERAL INFORMATION:
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SOFTWARE: PatentIn version 3.1
SEQ ID NO 61886
                                                                                                                                                                                                                        Matches 176; Conservative
                                                                                                                                                                                                                                          Best Local Similarity
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PRIOR APPLICATION NUMBER: 60/257,931
PRIOR FILING DATE: 2000-12-22
PRIOR APPLICATION NUMBER: 60/267,636
PRIOR FILING DATE: 2001-02-09
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR FILING DATE: 2001-02-16
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Pred. No. 1.7e-93;
6; Mismatches 13
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Pred. No. 1.7e-93;
6; Mismatches 13
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US-10-732-923-21018
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APPLICANT: Edgerton, Michael D
TITLE OF INVENTION: TRANSGENIC PLANTS WITH IMPROVED PHENOTYPES
FILE REFERENCE: 38-15(52796)C
CURRENT FILING DATE: 2003-12-10
PRIOR APPLICATION NUMBER: 10/310,154
PRIOR APPLICATION NUMBER: 10/310,154
PRIOR FILING DATE: 2002-12-04
NUMBER OF SEQ ID NOS: 24149
SEQ ID NO 21018
LENGTH: 195
                                                                                                                                                                                                                                                                                                                                                                            Sequence 63991, Application US/10282122A
Publication No. US20040029129A1
GENERAL INFORMATION:
APPLICANT: Wang, Liangsu
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Best Local Similarity
TITLE OF INVENTION: Identification of Essential Genes in Microorganisms FILE REFERENCE: ELITEA.034A CURRENT APPLICATION NUMBER: US/10/282,122A CURRENT FILING DATE: 2003-02-20 PRIOR APPLICATION NUMBER: 60/191,078 PRIOR APPLICATION NUMBER: 60/191,078 PRIOR FILING DATE: 2000-03-21 PRIOR PRIOR DATE: 2000-03-21 PRIOR APPLICATION NUMBER: 60/206,848 PRIOR PILING DATE: 2000-05-23 PRIOR APPLICATION NUMBER: 60/207,727
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Malone, Cheryl
Haselbeck, Robert
Ohlsen, Kari
Zyskind, Judith
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Trawick, John
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Pred. No. 7.3e-92;
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RESULT 11
US-10-732-923-21017
US-10-732-923-21017
; Sequence 21017, Application US/10732923
; Publication No. US20050108791A1
; GENERAL INFORMATION:
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PRIOR FILLING DATE: 2002-12-04
NUMBER OF SEQ ID NOS: 24149
SEQ ID NO 21017
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Best Local S
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TITLE OF INVENTION: TRANSGENIC PLANTS WITH IMPROVED PHENOTYPES
FILE REFERENCE: 38-15(52796)C
CURRENT APPLICATION NUMBER: US/10/732,923
CURRENT FILING DATE: 2003-12-10
CURRENT FILING DATE: 2003-12-10
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SOFTWARE: PatentIn version 3.1
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TYPE: PRT
ORGANISM: Mycobacterium leprae
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TYPE: PRT
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OR FILING DATE: 2000-10-23
OR PILING DATE: 2000-11-27
OR APPLICATION NUMBER: 60/253,625
OR APPLICATION NUMBER: 60/257,931
OR APPLICATION NUMBER: 60/257,931
OR FILING DATE: 2000-12-22
OR APPLICATION NUMBER: 60/267,636
OR APPLICATION NUMBER: 60/267,636
OR APPLICATION NUMBER: 60/269,308
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APPLICATION NUMBER: 60/
FILING DATE: 2000-09-06
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                                                                                1 MPLLTIGDOFPAYOLTALIGGDLSKVDAKOPGDYFTTITSDEHPGKWRVVFFWPKDFTFV 60
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Similarity 86.7%; Pred. No. 4.1e-90;
                                                                                                                                                Similarity
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CPTEIAAFSKLNDEFEDRDAQILGVSIDSEFAHFQWRAQHNDLKTLPFPMLSDIKRELSQ 120
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                                                                                                                            Conservative
                                                                                                                        88.3%; Score 904; DB 5; Length 195;
86.7%; Pred. No. 4.1e-90;
tive 12; Mismatches 14; Indels
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RESULT 13
US-10-282-122A-53752
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US-10-732-923-21019
                                                                                                                                                                  APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Objeen, Kari
APPLICANT: Objeen, Wall,
APPLICANT: Wall, Daniel
                                                                                                                                                                                                                                                                                          Sequence 53752, Application US/10282122A Publication No. US20040029129A1 GENERAL INFORMATION:
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PRIOR FILING DATE: 2002-12-04
NUMBER OF SEQ ID NOS: 24149
SEQ ID NO 21019
LENGTH: 195
TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
APPLICANT: Xu, H.
TITLE OF INVENTION: Identification of Essential
FILE REFERENCE: ELITRA.034A
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT FILING DATE: 2003-02-20
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TITLE OF INVENTION: TRANSGENIC PLANTS WITH IMPROVED PHENOTYPES
FILE REFERENCE: 38-15(52796)C
CURRENT APPLICATION NUMBER: US/10/732,923
CURRENT FILING DATE: 2003-12-10
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181 GDPTLNATELLKTSA 195
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Carr, Grant
Carr, Grant
Carroto, Robert
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                                                                                         Yamamoto, R. Forsyth, R.
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82.2%;
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60/191,078

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Sequence 21013, Application US/10732923

Publication No. US20050108791A1

GENERAL INFORMATION:
APPLICANT: Edgerton, Michael D

TITLE OF INVENTION: TRANSGENIC PLANTS WITH IMPROVED PHENOTYPES
FILE REFERENCE: 38-15 (52796) C

CURRENT APPLICATION NUMBER: US/10/732,923

CURRENT FILING DATE: 2003-12-10
PRIOR APPLICATION NUMBER: US/310,154
PRIOR APPLICATION NUMBER: US/310,154
PRIOR FILING DATE: 2002-12-04

NUMBER OF SEQ ID NOS: 24149

SEQ ID NO 21013

LENGTH: 198

TYPE: PRT
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US-10-732-923-21013
                                                                            ; ORGANISM: Corynebacterium diphtheriae
US-10-732-923-21013
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Matches
                    Best Local
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NUMBER OF SEQ ID NOS: 78614
SOFTWARE: PatentIn version 3.1
SEQ ID NO 53752
                                      Query Match
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Best Local Similarity
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OR APPLICATION NUMBER: 60/242,578
OR FILING DATE: 2000-10-23
IOR APPLICATION NUMBER: 60/253,625
IOR FILING DATE: 2000-11-27
OR APPLICATION NUMBER: 60/257,931
IOR FILING DATE: 2000-12-22
IOR APPLICATION NUMBER: 60/267,636
IOR APPLICATION NUMBER: 60/269,308
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                      Similarity
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Conservative
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                    66.9%; Score 685; DB 5; Length 198; 67.4%; Pred. No. 3.5e-66;
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Pred. No. 4.7e-67;
Mismatches
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Search completed: March 23, 2006, Job time: 42.0073 secs
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US-10-732-923-21258
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CURRENT FILING DATE: 2003-12-10
PRIOR APPLICATION NUMBER: 10/310,154
PRIOR FILING DATE: 2002-12-04
NUMBER OF SEQ ID NOS: 24149
SEQ ID NO 21258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 21258, Application US/10732923 Publication No. US20050108791A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Edgerton, Michael D
TITLE OF INVENTION: TRANSGENIC PLANTS WITH IMPROVED
FILE REFERENCE: 38-15(52796)C
                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 194
TYPE: PRT
ORGANISM: Streptomyces viridosporus
                                                                                                                                                                                                                                                                                                                                    ocal Similarity
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                                                               DETLDPVALL
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; Pred. No. 5.5e-59;
18; Mismatches 46
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| 4 4<br>5                                 | 43                 | 42                | 41                   | 40                   | 39                 | 38                | 37                 | 36                  | 35                 | 34                | 33                | 32                | 31                | 30                | 29               | 28                | 27                | 26                |
|--|--------------------|-------------------|----------------------|----------------------|--------------------|-------------------|--------------------|---------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|-------------------|-------------------|-------------------|
| 74<br>74                                 | 76                 | 76                | 77                   | 77                   | 77                 | 77                | 77.5               | 77.5                | 80                 | 81                | 82                | 82                | 83                | 85.5              | 91               | 92                | 92.5              | 92.5              |
| 7.2                                      | 7.4                | 7.4               | 7.5                  | 7.5                  | 7.5                | 7.5               | 7.6                | 7.6                 | 7.8                | 7.9               | 8.0               | 8.0               | 8.1               | B.3               | 8.9              | 9.0               | 9.0               | 9.0               |
| 230<br>231                               | 1307               | 16                | 348                  | 307                  | 200                | 32                | 3361               | 168                 | 162                | 32                | 518               | 376               | 164               | 32                | 32               | 164               | 32                | 32                |
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| Sequence 5639, Ap<br>Sequence 9149, Ap   | Sequence 2438, Ap  | Sequence 9, Appli | Sequence 20008, A    | Sequence 20009, A    | Sequence 4145, Ap  | Sequence 16, Appl | Sequence 1082, Ap  | Sequence 10829, A   | Sequence 1176, Ap  | Sequence 15, Appl | Sequence 420, App | Sequence 422, App | Sequence 70, Appl | Sequence 17, Appl | •                | ,~                | Sequence 13, Appl | Sequence 12, Appl |

ALIGNMENTS

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US-11-108-172-1121

US-11-108-172-1121

Sequence 1121, Application US/11108172

Publication No. US20050260177A1

GENERAL INFORMATION:

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APPLICANT: King, Gordon E.
APPLICANT: Skelky, Yasir A. W.
APPLICANT: Skelky, Yasir A. W.
APPLICANT: Skelky, Yasir A. W.
APPLICANT: Skelky, Yasir A. W.
APPLICANT: Vedvick Thomas S.
APPLICANT: Vedvick Thomas S.
APPLICANT: Vedvick Thomas S.
APPLICANT: Catter, Dartick
TITLE OF INVENTION: OF COLON CANCER AND METHODS FOR THEIR USE
FILE REFERENCE: 210121.471C15

TITLE OF INVENTION: OF COLON CANCER AND METHODS FOR THEIR USE
FILE REPERENCE: 210121.471C15

TITLE OF INVENTION: NUMBER: US 10/025.380

PRIOR APPLICATION NUMBER: US 10/025.380

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PRIOR APPLICATION NUMBER: US 09/595.629

PRIOR APPLICATION NUMBER: US 09/595.6
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CURRENT APPLICATION NUMBER: US/10/821,234
CURRENT FILING DATE: 2004-04-07
PRIOR APPLICATION NUMBER: US 60/462,047
PRIOR FILING DATE: 2003-04-07
NUMBER OF SEQ ID NOS: 1704
SOFTWARE: pt_SEQ_genes Version 1.0
SEQ ID NO 1038
LENGTH: 206
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US-10-821-234-1038
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; TYPE: PRT
; ORGANISM: Homo sapiens
US-11-108-172-1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1038, Application US/10821234
Publication No. US20050255114A1
GENERAL INFORMATION:
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Best Local 9
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                                                                                                                                                                                                                                                                                                                                 Matches
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Best Local Similarity 39.4%; Pred. No. 5.2e-28;
Matches 74; Conservative 35; Mismatches 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Labat, Ivan
APPLICANT: Stache-Crain, Birgit
APPLICANT: Andarmani, Susan
APPLICANT: Tang, Y. Tom
TITLE OF INVENTION: Methods for Diagnosis and Treatment of Preeclampsia
FILE REFERENCE: 821A
                                                                                                                                                                                                                                                                                                                                                  Match 31.1%; Score 318; DB 6; Length 206; Local Similarity 36.7%; Pred. No. 3.9e-25;
184
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               117 GVLEESQGVAYRGLFIIDPHGMLRQITVNDMPVGRSVEEVLRLLEAFQFVEKHGEVCPAN 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     123 GVL-NADGVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQ----SDELCACN 177
                                                                                                                                                              64 IAFSNRAEDFRKLGCEVLGVSVDSQFTHLAWINTPRKEGGLGPLNIPLLADVTRRLSEDY 123
                                                                                                                                                                                                     66 AAFSKLNDEFEDRDAQILGVSIDSEFAHFQW---RAQHNDLKTLPFPMLSDIKRELSQAA 122
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              57 TAFSDSVSRFNELNCEVLACSIDSEYAHLQWTLQDRKKGGLGTMAIPMLADKTKSIARSY 116
                                                                                                                                                                                                                                                                                                                               69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       66 AAFSKLNDEFEDRDAQILGVSIDSEFAHFQWRAQ---HNDLKTLPFPMLSDIKRELSQAA 122
                                                                                                                                                                                                                                                                                      6 IGDQFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDEHPGKWRVVFFWPKDFTFVCPTBI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6 IGDQFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDEHPGKWRVVFFWEKDFTFVCPTEI 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 INSPAPSFEEVALM------PNGSFKKISLSSYKCKWVVLFFYPLDFTFVCPTEV 56
WKPGSDTI 191
                                      WRKGDPTL 185
                                                                               ĠVĹKTĎEĠIÁYŔĠĹŔĬſĎĠKĠVĹŖQſŢVNDĹŖVĠŔŚVĎĔĄĹŔĹVQÁŖQYTĎĔĦĠĔVĊŖĄĠ 183
                                                                                                                     GVLNAD-GVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQ----SDELCACN 177
                                                                                                                                                                                                                                               IGKPAPDFKATAVVDG------AFKEVKLSDYKGKYVVLFFYPLDFTFVCPTEI
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                                                                                                                                                                                                                                                                                                                               33; Mismatches
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RESULT 3

Conservative

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APPLICANT: Sugimura, Keijiro
APPLICANT: Sugimura, Keijiro
APPLICANT: Sugimura, Keijiro
APPLICANT: Furuya, Mayumi
ITILE OF INVENTION: Therapeutic Methods and Agents for Diseases Associated with
ITILE OF INVENTION: Decreased Expression of AOP-1 Gene or AOP-1
FILE REFERENCE: 58777.000012
CURRENT APPLICATION NUMBER: US/10/642,272A
CURRENT FILING DATE: 2003-08-18
PRIOR APPLICATION NUMBER: PCT/JP02/01358
PRIOR FILING DATE: 2001-02-18
PRIOR FILING DATE: 2001-02-18
PRIOR FILING DATE: 2001-02-16
NUMBER: Patentin version 3.3
SOFTWARE: Patentin version 3.3
SEQ ID NO 4
IENGTH: 256
TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                          US-10-642-272A-4
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 4, Application US/10642272A Publication No. US20050277606A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: PatentIn version 3.3
SEQ ID NO 6
LENGTH: 257
TYPE: PRT
     Best Local Similarity
Matches 68; Conserv
                                                     Query Match
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Best Local (
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APPLICANT: Sugimura, Keijiro
APPLICANT: Sugimura, Keijiro
APPLICANT: Furuya, Mayumi
TITLE OF INVENTION: Therapeutic Methods and Agents for Diseases Associated of TITLE OF INVENTION: Decreased Expression of AOP-1 Gene or AOP-1
TITLE OF INVENTION: Decreased Expression of AOP-1 Gene or AOP-1
TILE REFERENCE: 58777.000012
CURRENT APPLICATION NUMBER: US/10/642,272A
CURRENT FILING DATE: 2003-08-18
PRIOR APPLICATION NUMBER: PCT/JP02/01358
PRIOR APPLICATION NUMBER: PCT/JP02/01358
PRIOR FILING DATE: 2001-02-18
PRIOR FILING DATE: 2001-02-16
NUMBER OF SEQ ID NOS: 30
NUMBER OF SEQ ID NOS: 30
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Local Similarity 37.2%; Pred. No. 5.3e-25;
hes 68; Conservative 38; Mismatches 57;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADGVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQ----SDELCACNWRKGD
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31.0%; Score 317; DB 6; Length 256; 37.2%; Pred. No. 6.6e-25; tive 37; Mismatches 58; Indels
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RESULT 6
US-10-642-272A-28
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LENGTH: 257;
TYPE: PRT;
ORGANISM: Rattus norvegicus
US-10-642-272A-5
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Sequence 28, Application US/10642272A
Publication No. US20050277606A1
GENERAL INFORMATION:
APPLICANT: Hattori, Fumiyuki
APPLICANT: Sugimura, Keijiro
APPLICANT: Furuya, Mayumi
TITLE OF INVENTION: Therapeutic Methods and Agents for Diseases Associated with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
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APPLICANT: Sugimura, Keijiro
APPLICANT: Sugimura, Keijiro
APPLICANT: Sugimura, Keijiro
APPLICANT: Furuya, Mayumi
TITLE OF INVENTION: Therapeutic Methods and Agents for Diseases Associated with
TITLE OF INVENTION: Decreased Expression of AOP-1 Gene or AOP-1
FILE REFERENCE: 58777.000012
CURRENT APPLICATION NUMBER: US/10/642,272A
CURRENT FILING DATE: 2003-08-18
PRIOR APPLICATION NUMBER: PCT/JP02/01358
PRIOR APPLICATION NUMBER: PCT/JP02/01358
PRIOR APPLICATION NUMBER: JP 41003/2001
PRIOR APPLICATION NUMBER: JP 41003/2001
PRIOR PILING DATE: 2001-02-16
NUMBER OF SEQ ID NOS: 30
SOFTWARE: Patentin version 3.3
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PTI 241
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; FEATURE:
; NAME/KEY: misc feature
; LOCATION: (72)...(72)
; OTHER INFORMATION: The xaa at location 72 stands for Asn, or Thr.
US-10-527-771-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: University Gent
TITLE OF INVENTION: Ostertagia vaccine
FILE REFERENCE: 2002-015
CURRENT APPLICATION NUMBER: US/10/527,771
CURRENT FILING DATE: 2005-03-11
PRIOR APPLICATION NUMBER: US 10/243,319
PRIOR FILING DATE: 2002-09-13
NUMBER OF SEQ ID NOS: 27
SOFTWARE: Patentin version 3.2
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LENGTH: 198
TYPE: PRT
ORGANISM: Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 6, Application US/10527771
Publication No. US20050271683A1
GENERAL INFORMATION:
                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQ ID NO 6
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                                                                                                                                                                                                       Best Local
                                                                                                                                                                                                                            Query Match
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CURRENT APPLICATION NUMBER: US/10/642,272A
CURRENT FILING DATE: 2003-08-18
PRIOR APPLICATION NUMBER: PCT/JP02/01358
PRIOR FILING DATE: 2001-02-18
PRIOR APPLICATION NUMBER: JP 41003/2001
PRIOR APPLICATION NUMBER: JP 41003/2001
PRIOR APPLICATION NUMBER: JP 41003/2001
PRIOR APPLICATION NUMBER: JP 41003/2001
SOPTWARE: Patentin version 3.3
                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Ostertagia ostertagi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            raten 30.5%; Score 312; DB 6; Local Similarity 37.2%; Pred. No. 1.5e-24; es 70; Conservative 32. Minnet.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         178 WRKGDPTL 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               123 GVL-NADGVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQ----SDELCACN 177
51 IÁFSDRVEEFKKIDÁAVLACSXDSVFSHLAWINTPRKMGGLGDMNIPVLADTNHQIAKDY 110
                                 66 AAFSKLNDEFEDRDAQILGVSIDSEFAHFQW----RAQHNDLKTLPFPMLSDIKRELSQAA 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               56 IAFSDHAEDFRKLGCEVLGVSVDSQFTHLAWINTPRKEGGLGPLNIPLLADVTKSLSQNY 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            66 AAFSKLNDEFEDRDAQILGVSIDSEFAHFQW---RAQHNDLKTLPFPMLSDIKRELSQAA 122
                                                                                                                                                                                                                                                                                                                                                                                                                                        193
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                                                                                                                                                                               l Similarity
68; Conserv
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                                                                                                                     IGDQFPAYQLTALIGGDLSKVDAKQPGDYFTTITSDEHPGKWRVVFFWPKDFTFVCPTEI 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WKPGSDTI 183
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IGKPAPDFTGTAVVDG------AFKEIKLSDYRGKYVVLFFYPLDFTFVCPTEI
                                                                                                                                                                                 Conservative
                                                                                                                                                                                                    29.1%;
                                                                                                                                                                               ; Score 298; DB 6; Pred. No. 4e-23; 31; Mismatches
                                                                                        - FIDVKLSDYKĞKYTVLFFYPLDFTFVCPTEİ
                                                                                                                                                                                                                          DB 6; Length 193;
                                                                                                                                                                                 72;
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                                                                                                                                                                               Gaps
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APPLICANT: LIM, JACKIE EUN-AH
APPLICANT: LIM, JACKIE EUN-AH
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR PRODUCTION OF DISULFIDE
TITLE OF INVENTION: BOND CONTAINING PROTEINS IN HOST CELLS
FILE REFERENCE: HMV-052.01
CURRENT FILING DATE: 2005-02-16
CURRENT FILING DATE: 2005-02-16
PRIOR APPLICATION NUMBER: US/91/059,705
PRIOR FILING DATE: 1999-10-05
PRIOR FILING DATE: 1999-10-05
PRIOR APPLICATION NUMBER: 60/163,939
PRIOR APPLICATION NUMBER: 60/163,939
PRIOR APPLICATION NUMBER: 60/163,939
PRIOR APPLICATION NUMBER: 60/164
PRIOR FILING DATE: 1999-11-08
PRIOR FILING DATE: 1999-11-17
NUMBER OF SEQ ID NOS: 24
PRIOR FILING DATE: 1999-11-17
NUMBER OF SEQ ID NOS: 24
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US-10-821-234-1419
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; ORGANISM: Escherichia coli
US-11-058-926-22
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US-11-058-926-22
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Publication No. US20050255114A1
                                                                                                                                                                                                                                                     GENERAL INFORMATION:
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Best Local
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Publication No.
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APPLICANT: Stache-Crain, Birgit
APPLICANT: Andarmani, Susan
APPLICANT: Tang, Y. Tom
TITLE OF INVENTION: Methods for Diagnosis and Treatment of Preeclampsia
FILE REFERENCE: 821A
CURRENT APPLICATION NUMBER: US/10/821,234
CURRENT FILING DATE: 2004-04-07
PRIOR APPLICATION NUMBER: US 60/462,047
PRIOR FILING DATE: 2003-04-07
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APPLICANT: ASLUND, FREDRIK
APPLICANT: BESSETTE, PAUL H.
APPLICANT: GEORGIOU, GEORGE
                                                                                                                                                                                                                            APPLICANT: Labat, Ivan
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                       154 VGRNVDEVLKVLDALQ-----SDELCACNWRKGDFTL 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       81 AWHSSSETIAKIKYAMIGDPTGALTRNFDNMREDEGLADRATFVVDPQGIIQAIEVTAEG 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                          IGRDASDLLRKIKAAQYVASHPGEVCPAKWKEGEATL 177
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QWRAQHNDLKTLPFPMLSDIKRELSQAAGVLNAD-GVADRVTFIVDPNNEIQFVSATAGS 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FTTITSDEHPGKWRVVFFWPKDFTFVCPTEIAAFSKLNDEFEDRDAQILGVSIDSEFAHF 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WRKGDPTLDAG 188
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vo. US20060030022A1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        68;
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APPLICANT: GEORGIOU, GEORGE
APPLICANT: RITZ, DANIEL
APPLICANT: LIM, JACKIE EUN-AH
APPLICANT: LIM, JACKIE EUN-AH
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR PRODUCTION OF DISULFIDE
TITLE OF INVENTION: BOND CONTAINING PROTEINS IN HOST CELLS
FILE REFERENCE: HMV-052.01
CURRENT APPLICATION NUMBER: US/11/058,926
CURRENT FILING DATE: 2005-02-16
PRIOR APPLICATION NUMBER: US/09/679,705
PRIOR FILING DATE: 2000-10-05
PRIOR FILING DATE: 1999-11-05
PRIOR APPLICATION NUMBER: 60/157,770
PRIOR APPLICATION NUMBER: 60/157,770
PRIOR APPLICATION NUMBER: 60/159,339
PRIOR APPLICATION NUMBER: 60/166,044
PRIOR FILING DATE: 1999-11-08
PRIOR FILING DATE: 1999-11-17
NUMBER OF SEQ ID NOS: 24
SOFTWARE: PATENTIN Ver. 2.1
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US-11-058-926-24
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                                                                                                                                                                                                                                                                                                 SEQ ID NO 24
LENGTH: 188
TYPE: PRT
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SOFTWARE: pt SEQ genes Version 1.0
SEQ ID NO 1415
LENGTH: 271
                                                                                                                                                                       Matches
                                                                                                                                                                                                               Query Match
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APPLICANT: ASLUND, F
APPLICANT: BESSETTE,
                                                                                                                                                                                             Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         185 L---DAGEL 190
                                       94 FOWRACHNOLKTLEFFMLSDIKRELSQAAGVLNAD-GVADRVTFIVDPNNEIQFVSATAG 152
                                                                                                                                                                     54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            73 DEFEDRDAQILGVSIDSEFAHFQW---RAQHNDLKTLPFPMLSDIKRELSQAAGV-LNAD 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23 LSKVDAKQPGDY-----FTTITSDEHPGKWRVVFFWPKDFTFVCPTEIAAFSKLN 72
                                                                                                                                                                                                                                                                                                                       188
                                                                                                                                                                                             Similarity
KAWHSSSETIAKIKYAMIGDPTGALTRNFDNMREDEGLADRATFVVDPQGIIQAIEVTAE 140
                                                                                                                           FTTITSDEHPGKWRV-VFFWPKDFTFVCPTEIAAFSKLNDEFEDRDAQILGVSIDSEFAH
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GVADRVTFIVDPNNEIQFVSATAGSVGRNVDEVLRVLDALQ----SDELCACNWRKGDPT 184
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LSKAKISKPAPYWEGTAVIDGEFKELKLTDYRGKYLVFFFYPLDFTFVCPTEIIAFGDRL 135
                                                                                   FIEITEKDTEGRWSVFFFFYPADFTFVCPTELGDVADHYBELQKLGVDVYAVSTDTHFTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ASLUND, FREDRIK
BESSETTE, PAUL H.
GEORGIOU, GEORGE
                                                                                                                                                                       Conservative
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                                                                                                                                                                                           25.7%;
                                                                                                                                                                     29;
                                                                                                                                                                                           Score 263.5; DB 7
Pred. No. 1.3e-19;
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Pred. No. 3.2e-20;
                                                                                                                                                                       Mismatches
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                                                                                                                                                                         Indels
                                                                                                                                                                                                               Length 188;
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SVGRNVDEVLRVLDALQ----SDELCACNWRKGDPTL

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; TYPE: PRT
; ORGANISM: Bacillus subtilis
US-11-077-619-4
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US-11-077-619-4
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Publication No.
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Publication No. US20060040279A1
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                                                                                                   APPLICANT: Juergen, Britta
APPLICANT: Voigt, Birgit
TITLE OF INVENTION: DNA CHIPS USED FOR BIOPROCESS
FILE REFERENCE: HENK-0122 / H5692
CURRENT APPLICATION NUMBER: US/11/077,619
CURRENT FILING DATE: 2005-03-11
PRIOR APPLICATION NUMBER: PCT/EP2003/00979
PRIOR FILING DATE: 2003-09-09
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APPLICANT: Voigt, Birgit
TITLE OF INVENTION: DNA CHIPS USED FOR BIOPROCESS
FILE REFERENCE: HENK-0122 / H5692
CURRENT APPLICATION NUMBER: US/11/077,619
CURRENT FILING DATE: 2005-03-11
PRIOR APPLICATION NUMBER: PCT/EP2003/009979
PRIOR FILING DATE: 2003-09-09
                                   PRIOR APPLICATION NUMBER: DE 10242433.0 PRIOR FILING DATE: 2002-09-11 NUMBER OF SEQ ID NOS: 130
                                                                                                                                                                                                                                                                                    APPLICANT: Feesche, Joerg
APPLICANT: Maurer, Karl-Heinz
APPLICANT: Breves, Roland
APPLICANT: Schweder, Thomas
APPLICANT: Hecker, Michael
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APPLICANT: Maurer, Karl-Heinz
APPLICANT: Breves, Roland
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56; Conserv
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Hecker, Michael
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                version 3.3
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RESULT 14
US-11-096-568A-657
US-11-096-568A; Sequence 657, Application US/11096568A; Publication No. US20060048240A1; GENERAL IMFORMATION:
; APPLICANT: Alexandrov, Nickolai et al.; TITLE OF INVENTION: Sequence-Determined; TITLE OF INVENTION: Therby
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; FEATURE:
, NAME/KEY: misc feature
; LOCATION: (1). (216)
; OTHER INFORMATION: Ceres Seq. ID no.
US-11-096-568A-33952
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TYPE: PRT
; ORGANISM: Bacillus licheniformis
US-11-077-619-86
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US-11-096-568A-33952
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CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 33952
LENGTH: 216
TYPE: PRT
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Best Local Similarity
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                                                                                                                                                                                                                                                                                             106 IIPQLNMIDPIENGPSRALHIVGPDSKIKLSFLYPSTTGRNMDEVLRALDSLLMASKHNN 165
                                                                                                                                                                                                                                                                                                                                                                            46 CTTELGAMAKYAHEFDKRGVKLLGLSCDDVQSHKDWIKDIEAFNHGSKVNYFIIADPNKE 105
                                                                                                                                                                                                                                                                                                                                                                                                                   61 CPTEIAAFSKLNDEFEDRDAQILGVSIDSEFAHFQWRAQ---HNDLKTLPFPMLSDIKRE 117
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55; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                              MPGITLGDTVPNLEVE-----TTHDKFKLHDYFA-----NSWTVLFSHPGDFTPV 45
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    Sequence-Determined Therby
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Pred. No. 3.3e-19;
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Pred. No. 4.1
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; PILE REFERENCE: 2750-1592PUS2
; CURRENT APPLICATION NUMBER: US/11/096,568A
; CURRENT FILING DATE: 2005-04-01
; NUMBER OF SEQ ID NOS: 34471
; SEQ ID NO 657
; LENGTH: 229
; TYPE: PRT
; ORGANISM: Zea mays subsp. mays
; FEATURE:
; NAME/KEY: misc feature
; LOCATION: (1)...(229)
; OTHER INFORMATION: Ceres Seq. ID no. 12637707
US-11-096-568A-657
                                                                                                                                                                                                                                                                                                                                            APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence-Determined DNA Fragments and Corresponding Polypeptides
TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 656
SEQ ID NO 656
SEQ ID NO 656
TYPE: PRT
ORGANISM: Zea mays subsp. mays
FEATURE: NAME/KEY: misc feature
LOCATION: (1)..(245)
OTHER INFORMATION: Ceres Seq. ID no. 12637706
US-11-096-568A-656
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US-11-096-568A-656
US-11-096-568A-656
Sequence 656, Application US/11096568A
Publication No. US20060048240A1
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Best Local Similarity
Matches 57; Conserv
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Best Local (
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                                       109 PMLSDIKRELSQAAGVLNAD------GVADRVTFIVDPNNEIQFVSATAGSVGRNVDEV 161
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 109 PMLSDIKRELSQAAGVLNAD------GVADRVTFIVDPNNEIQFVSATAGSVGRNVDEV 161
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                                                                                                                         60 VCPTEIAAFSKLNDEFEDRDAQILGVSIDSEFAHFQW------RAQHNDLKTLPF 108
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                                                                                    VCTTEMAAMAGYAKEFEKRGVKLLGISCDDVESHRQWTKDVEAYGGKQQQQQQATTTKVTF 120
                                                                                                                                                                         MPGLTIGDTVPNLELDSTHG-------KIRIHDYVGDGYAIIFSHPADFTP 60
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PILADPARDAIRQLNMVDPDEKDAAGRSMPSRALHVVGPDKAVKLSFLYPATTGRNMDEV 180
                                                                                                                                                                                                                                                            20.6%; Score 210.5; DB 7; ilarity 27.5%; Pred. No. 4.9e-14; Conservative 34; Mismatches 75;
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Qy 162 LRVLDALQS------DELCACNWRKGD 182
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Db 181 LRAVDSLLTAAKHGGKVATPANWKPGE 207
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Search completed: March 23, 2006, 06:29:37 Job time : 5.67951 secs

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Result
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Maximum Match 100%
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1397
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Gapop 10.0 ,
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2443163 segs, 439378781 residues
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AAU71872
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ADI37321
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Biocceleration
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Adi37320 M. tuberc
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Abg3097878 M. tuberc
Abg30970 Mycobacte
Abd79640 Coynebac
Aau71872 C. glutam
Aau71865 C. glutam
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Aau62080 Propionib
Abm58599 Propionib
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ADI37306
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| <b>4</b><br>5      | 44                 | 43                 | 42                 | 41                 | 40       | 39                 | 38                 | 37                 | 36       | 35                 | 34                 | ω<br>W             | 32       | 31                 | 30                 | 29                 | 28                 | 27                 | 26       | 25                 |
|--------------------|--------------------|--------------------|--------------------|--------------------|----------|--------------------|--------------------|--------------------|----------|--------------------|--------------------|--------------------|----------|--------------------|--------------------|--------------------|--------------------|--------------------|----------|--------------------|
| 105.5              | 107                | 107.5              | 107.5              | 107.5              | 108      | 108                | 109                | 109                | 109      | 109                | 109                | 109                | 109.5    | 110                | 112                | 112                | 112.5              | 112.5              | 113      | 116.5              |
| 7.6                | 7.7                | 7.7                | 7.7                | 7.7                | 7.7      | 7.7                | 7.8                | 7.8                | 7.8      | 7.8                | 7.8                | 7.8                | 7.8      | 7.9                | 8.0                | 8.0                |                    |                    | 8.1      | 8. <sub>3</sub>    |
| 613                | 206                | 6751               | 6751               | 6751               | 245      | 147                | 941                | 941                | 292      | 292                | 158                | 153                | 166      | 149                | 189                | 189                | 183                | 162                | 153      | 198                |
| 4.                 | œ                  | œ                  | 8                  | œ                  | 8        | 4                  | 0                  | φ                  | v        | w                  | 7                  | w                  | σ        | 7                  | œ                  | ហ                  | w                  | w                  | w        | w                  |
| AAU04887           | ADX77663           | AEB86791           | AEB86994           | ADQ91702           | ADY06981 | AAG91259           | ABU34503           | ABU36688           | ABP07225 | AAB41331           | ADM25536           | AAG54318           | ABM73534 | ADM25915           | ADS06786           | ABP38950           | AAG54316           | AAG54317           | AAG42274 | AAG42272           |
| Aau04887 Micromono | Adx77663 Plant ful | Aeb86791 Streptomy | Aeb86994 Streptomy | Adq91702 Polyketid |          | Aag91259 C glutami | Abu34503 Protein e | Abu36688 Protein e | -        | Aab41331 Human ORF | Adm25536 Hyperther | Aag54318 Arabidops |          | Adm25915 Hyperther | Ads06786 Staphyloc | Abp38950 Staphyloc | Aag54316 Arabidops | Aag54317 Arabidops |          | Aag42272 Arabidops |

## ALIGNMENTS

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The present invention describes polypeptides or their fragments, which are expressed during the latent stage of a mycobacterial infection, and/or nucleic acids encoding the polypeptides, which are useful for creating a therapeutic vaccine against tuberculosis. Also described: (1) a therapeutic vaccine against tuberculosis comprising one or more polypeptides; (2) a method for treating an animal, including a human being, with tuberculosis caused by virulent mycobacteria, e.g. by Mycobacterium tuberculosis, M. africanum or M. bovis; (3) a method for
                                                                                                                                                                                             Use of one or more polypeptides or their fragments, which are expressed during the latent stage of the mycobacterial infection, and/or nucleic acids encoding the polypeptides, for a therapeutic vaccine against tuberculosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mycobacterial infection; vaccine; tuberculosis; Mycobacterial tuberculosis; immunisation; antibacterial; gene therapy; low oxygen induced antigen.
                                                                                                                                                              Claim 3; SEQ ID NO 27; 76pp; English.
                                                                                                                                                                                                                                                                                 WPI; 2004-122778/12.
N-PSDB; ADI37351.
                                                                                                                                                                                                                                                                                                                                                                                                                                  08-JUL-2003; 2003WO-DK000477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mycobacterium tuberculosis.
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immunising an animal, including a human being, against tuberculosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tuberculosis low oxygen induced antigen Rv2624c
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                                                                                                                                                                                                                                                                                                                                Rosenkrands
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ABU25937
AAU62080
ABM585947
ADA48734
ABM90364
ABM90364
ADBM90364
ADBM6830
ADY60949
AAW34202

Ady05947 Ada48734 Abm90364 Ada48322 Abm86830

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Ady60949

AAG42273

**LAW55803** 

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AAU71865 AAG92991 ABG80324 AEB15399

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Best Local Similarity
Use of one or more polypeptides or their fragments, which are expressed during the latent stage of the mycobacterial infection, and/or nucleic acids encoding the polypeptides, for a therapeutic vaccine against
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis caused by virulent mycobacteria in an animal, including a human being; (5) a method for diagnosing previous or ongoing infection with a virulent mycobacterium; and (6) a method of diagnosing Mycobacterium tuberculosis infection in a subject. The polypeptides have antibacterial activities, and can be used in vaccines and in gene therapy. The polypeptides are useful for the manufacture of a thereto vaccine for treating an individual who is infected by a virulent mycobacterium, e.g. M. tuberculosis, and who is not vaccinated with BCG against tuberculosis. The present sequence represents a low oxygen induced antigen, which is
                                                               WPI; 2004-122778/12.
N-PSDB; ADI37345.
                                                                                                                                                                                                                                                                                                                                 mycobacterial infection; vaccine; tuberculosis; Mycobacterium tuberculosis; immunisation; antib low oxygen induced antigen.
                                                                                                                                                                                                        08-JUL-2003; 2003WO-DK000477
                                                                                                                                                                             13-JUL-2002; 2002DK-00001098
                                                                                                                                                                                                                                                                                                      Mycobacterium tuberculosis.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADI37300 standard; protein;
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                                                                                                                                                                                                                                                                                                                                                                                               tuberculosis low oxygen induced
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                                                                                                               Stryhn
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Pred. No. 1.1e-136;
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Query Match Best Local

Similarity

29.8%;

Length 279

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The present invention describes polypeptides or their fragments, which CC are expressed during the latent stage of a mycobacterial infection, CC and/or nucleic acids encoding the polypeptides, which are useful for CC creating a therapeutic vaccine against tuberculosis. Also described: (1) CC a therapeutic vaccine against tuberculosis comprising one or more CC polypeptides; (2) a method for treating an animal, including a human CC being, with tuberculosis caused by virulent mycobacteria, e.g. by Mycobacterium tuberculosis, M. africanum or M. bovis; (3) a method for CC immunising an animal, including a human being, against tuberculosis CC caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis CC caused by virulent mycobacteria; in an animal, including a human being; (5) a method for diagnosing previous or ongoing infection with a virulent mycobacterium; and (6) a method of diagnosing Mycobacterium tuberculosis CC infection in a subject. The polypeptides have antibacterial activities, and can be used in vaccines and in gene therapy. The polypeptides are cuseful for the manufacture of a therapeutic vaccine for treating an conditional who is infected by a virulent mycobacterium, e.g. M. CC individual who is not vaccinated with BCG against tuberculosis. The present sequence represents a low oxygen induced antigen, which is cC used in the exemplification of the present invention.
Sequence 279 AA;
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                                                                                                                                                                 SIVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEPDDPGYAAHGAAARKLAAAENAV
                                                                                                                                                                                            REAQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGRYASSILGSTATE 127
QEHVEQLVGAPGNAVLQEAGCTLLVV
                         AGQLARLVGPSGHPVFRHAECSVLVV
                                                     QSGVGDTGDDVRASLDRWLARWQPRYPDVRVQSAAVHGELLDYLAGLGRSVHMVVLSASD
                                                                                PEELREIPD----GEFERRVQDWHHRHPDVRVYPITTHTGIARFLADHDERVQLAVIGGGE
                                                                                                           LALSAQCPVAIVRPHRVPIGRDAAWIVVEADGSSDIGVLLGAVMAEARLRDSPVRVVTCR
                                                                                                                                     LAEKAHCPVAVMRSKVDQPASDINWIVVRMTDAPDNEAVLEYAAREAKLRQAPILALGGR
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Pred. No. 2.2e-34;
6; Mismatches 116;
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08-JUL-2003; 2003WO-DK000477
                   22-JAN-2004
                                                                                     mycobacterial infection; vaccine; tuberculosis; Mycobacterium tuberculosis; immunisation; antib
                                                                                                                  M. tuberculosis low oxygen induced antigen Rv3134c SEQ
                                                                                                                                       22-APR-2004
                                                          Mycobacterium tuberculosis
                                                                                                                                                         ADI37321;
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                                       WO2004006952-A2
                                                                             oxygen induced antigen.
                                                                                                                                                                          standard; protein;
                                                                                                                                      (first entry)
                                                                                                                                                                            268
                                                                                       antibacterial; gene therapy;
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IJ NO:42

13-JUL-2002;

2002DK-00001098

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RESULT 4
ADI37298
ID ADI3
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AC ADI3
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AC ADI3
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 100
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                     22-APR-2004
                                                         ADI37298;
                                                                                          ADI37298 standard;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Use of one or more polypeptides or their fragments, which are expressed during the latent stage of the mycobacterial infection, and/or nucleic
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                                                                                                                                                                                                                                                                                                                                        GSALCPVAVIHPSPAEPATTSQVSAVVAEV----DNGVVLRHAFEEARLRGVPLRAVA--
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                                                                                                                                                                                                                          AVIGGGEAGQLARLVGPSGHPVFRHAECSVLVVR 271
                                                                                                                                                                                                                                                                                                                                                                                                                                   AQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGRYASSILGSTATELA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTHPSPDDYDRDLAHAERSLRE
                                                                                                                                                                                       FVADSHSAHELCGAYQPG----
                                                                                                                                                                                                                                                              - VHAAETPDDVEQGSRLAHVHLSRRLAHWTRLYPEVRVDRAIAGGSACRHLAANAKPGQL
                                                                                                                                                                                                                                                                                                   PEELREIPDG-----EFERRVQDWHHRHPDVRVYPITTHTGIARFLADHDERVQL
                                                                                                                                                                                                                                                                                                                                                                         EKAHCPVAVMRSKVDQPA--SDINWIVVRMTDAPDNEAVLEYAAREAKLRQAPILALGGR
                                                                                                                                                                                                                                                                                                                                                                                                             ASRKVEATGQPVKIETEVLCGRPLTKLMQESRSAAMLCVGSVGLD-HVRGRRGSVAATLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RAVVVGIDGSRAATHAALWAVDEAVNRDIPLRLVYVIDPSQLSAAGEGGGQSAARAALHD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25.6%; ilarity 36.5%; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A
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                     (first entry)
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                                                                                            protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       76pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 357.5; 1
Pred. No. 2.7e.
35; Mismatches
                                                                                              295 AA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 stage of a mycobacterial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .7e-28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   intection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                   237
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                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      M. tuberculosis low oxygen induced antigen Rv2005c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present invention describes polypeptides or their fragments, ware expressed during the latent stage of a mycobacterial infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Use of one or more polypeptides or their fragments, which are expressed during the latent stage of the mycobacterial infection, and/or nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        08-JUL-2003; 2003WO-DK000477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mycobacterium tuberculosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mycobacterial infection; vaccine; tuberculosis;
Mycobacterium tuberculosis; immunisation; antibacterial; gene therapy;
                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 3; SEQ ID NO 19; 76pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       acids encoding the polypeptides, for a therapeutic vaccine against
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Andersen P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13-JUL-2002; 2002DK-00001098
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                                                                                                                                                                                                                                                                                   12 IIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIK-----PTHPSPDDY-----DRDL 60
                                                                                                                                                                                                                                                                                                                                            Similarity
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                                                                                                                                                                                             AHAERSLREAQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGRYASSI 120
                                                                                                                                                           QIVANAVKLAKEAVGADRKL-SVKSELVFSTPVPTMVEISNEAEMVVLGSSGRGALARGL 128
                                                                                                                                                                                                                                           VVVGVDGSLESDAAACWGATDAAMRNIPLTVVHVVNADVATWPPMPYPETWGVWQEDEGR 69
                                                                                                                                                                                                                                                                                                                                                                                                       295
VELIAVHAWSDVEVVELPGLDFSAVQQEAELSLAERLAGWQERYPDVPVSRVVVCDRPAR
                                        APILALGGRPE-ELREIPDGEFE------RRVQDWHHRHPDVRVYPITTHTGIAR 226
                                                                                                                     LGSTATELAEKAHCPVAVMRSKVDQPASDINW--IVVRMTDAPDNEAVLEYAAREAKLRQ 178
                                                                                LGSVSSSLVRRAGCPVAVIHSD-DAVIPDPQHAPVLVGIDGSPVSELATAVAFDEASRRG 187
                                                                                                                                                                                                                                                                                                                           Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                       ₽,
                                                                                                                                                                                                                                                                                                                                          29.6%;
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                                                                                                                                                                                                                                                                                                                           48;
                                                                                                                                                                                                                                                                                                                                          Score 286; DB 8;
Pred. No. 8.7e-21;
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                                                                                                                                                                                                                                                                                                                                                               Length 295;
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                                                                                                                                                                                                                                                                                                                           Gaps
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FLADHDERVOLAVIGG-GEAGQLARLVGPSGHPVFRHAECSVLVVRR

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                                                                                                                                                                                                                         CC has at least one of the following properties: (a) the PP induces an in CC witro recall response, or an in vitro response, during primary infection CC witro recall response, or an in vitro response, during primary infection CC yamma, (b) pp induces a protective immunity, determined by vaccinating an CC animal with PP and an adjuvant, three times at two weeks intervals, (c) PP induces an in vitro response, or in vitro recall response, determined by vaccinating an CC respectively, from Peripheral Blood Mononuclear Cells (PBMC) withdrawn CC from TB patients, or PPD positive individuals, 6 months after diagnosis, (d) PP induces a specific antibody response in a TB patient, as CC (d) PP induces a specific antibody response in a TB patient, as CC western blot, (e) PP induces a positive delayed type hypersensitivity (DTH) response, determined by intradermal injection. (I) and (II) are CC useful in preparing a prophylactic or therapeutic medicine as a vaccine for induction of a protective or generation of an immune response in a CC mammal against infection with a virulent Mycobacterium. (I) and (II) are also useful as diagnostic reagent for the diagnosis of a virulent immunological memory, providing long term protection against TB. This sequence represents a Microbacterium tuberculosis TB32 antigen described in the formulation induces efficient and the contraction of the diagnosis of a virulent contraction in the vaccine of the invention induces efficient in the contraction in tuberculosis TB32 antigen described in the contraction described in the contraction described in the contraction described in the contraction described in the contraction described in the contraction described in the contraction described in the contraction described in the contraction described in the contraction described in the contraction described in the contraction described in the contraction described in the contraction described in the contraction described in the contraction described in the contraction described in the contraction de
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Query Match
Best Local S
Matches 84
                                                                                                                                        Sequence 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This invention describes a novel polypeptide (PP) of somatic proteins extract (I) which have tuberculostatic activity. (I) or their subsequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Novel polypeptide of somatic protein extract useful as vaccine against virulent Mycobacterium infection, isolated from cell wall, cell membran
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Andersen P,
Skjot RLV,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 1; Page 106-107; 126pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (STAT-) STATENS SERUM INST.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cytosol
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                                                                                                                                                                                                                  invention
                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        type
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             interferon-gamma; IFN-gamma;
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Rosenkrands
Conservative
                                                                                                                                            A
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99US-0116673P.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entry)
                                 19.1%;
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42;
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                             Score 267; DB 3;
Pred. No. 8.4e-19;
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The present invention relates to a new method for the identification of anti-mycobacterial agent that modulates activity and/or expression of protein expressed by Mycobacterium in non-oxygen limiting or hypoxic stationary, hypoxic growth phase. The method involves contacting a test agent and protein, and monitoring the effect of agent on activity/ expression of the protein. The methods of the invention are useful for expression or animal body by therapy, in a diagnostic method practised on the human or animal body, and for manufacturing medicament for diagnosing, prophylaxis or treatment of mycobacterial infection, especially tuberculosis. The invention is also useful for in vitro or in vivo diagnosing of mycobacterial infection in a sample. The invention cap be used for diagnosing a dormant mycobacterial infection. The present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Identifying an anti-mycobacterial agent that modulates activity/expression of a protein expressed by Mycobacterium, monitoring the effect of an agent on the activity/expression protein or polynucleotide/vector encoding it.
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N-PSDB; ABK89546.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QAPILALGGRPE-ELREIP------DGEFERRVQDWHHRHPDVRVYPITTHTGIA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ROLVORSEEAOLVVVGSRGRGGYAGMLVGSVGETVAQLARTPVIVAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RFLADHDERVQLAVIGG-GEAGQLARLVGPSGHPVFRHAECSVLVVR 271
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29.3%;
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Pred. No. 8.4e-19;
2; Mismatches 131
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DL-AHAERSLREAQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGRYA 117 TEDIVVVAVDGSDASKQAVRWAANTANKRGIPLRLAS--SYTMPQFLYAEGMVPPQELFD TMKTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTHPS-----PDDYDR Similarity

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Conservative

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Score 266; DB 4; I Pred. No. 1.1e-18; 5; Mismatches 131;

Length 301; Indels

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12-AUG-1999;
27-AUG-1999;
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14-JUL-1999;
purine and pyrimidine bases, nucleosides, nucleotides, and unsaturated fatty acids, diols, carbohydrates, arovitamins, cofactors, polyketides and enzymes
                                                      AAF71753 to AAF72330 encode the Corynebacterium glutamicum metabolic pathway (MP) proteins given in AAB79634 to AAB80211. The C. glutamicum nucleic acids are useful for the production of fine chemicals in microorganisms, including organic acids, nonproteinogenic amino acids,
                                                                                                                                                                               Nucleic acids from Corynebacterium glutamicum encoding metabolic pathway proteins, useful for producing fine chemicals in microorganisms, including organic acids, nonproteinogenic amino acids, and purine and pyrimidine bases.
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                                                                                                                                                Claim 20; Page 174-175; 1737pp; English.
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                                                   Query Match
Best Local S
Matches 85
                                                                                                                                                                                                                     The present invention relates to the isolation of novel Corynebacterium glutamicum genes (AAS96073-AAS96132) encoding metabolic pathway (MP) proteins. The metabolic pathway proteins of the invention include enzymes involved in the lysine and methionine biosynthetic pathways. The polynucleotide sequences of the invention can be used for the large-scale production and/or modulation of expression of fine chemicals such as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nucleic acids encoding metabolic pathway proteins from Corynebacterium glutamicum, useful for producing methionine and lysine in Corynebacterim and Brevibacterium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Metabolic pathway protein; MP; lysine biosynthesis pathway; methionine biosynthesis pathway; large-scale production of fine Corynebacterium diphtheriae; diphtheria.
                                                                                                                                                          Sequence 301
                                                                                                                                                                                                             glutamicum metabolic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Disclosure; Page 169-170; 316pp; English
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23-JUN-2000;
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TMKTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTHPS-----PDDYDR
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                                                      Conservative
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2000US-00606740
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i, Hwang B;
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                                                   45;
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                                                                                                      Length 301;
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                                                                                                                    The present invention relates to the isolation of novel Corynebacterium glutamicum genes (AAS96073-AAS96132) encoding metabolic pathway (MP) proteins. The metabolic pathway proteins of the invention include enzyme involved in the lysine and methionine biosynthetic pathways. The polynucleotide sequences of the invention can be used for the large-scal production and/or modulation of expression of fine chemicals such as lysine and methionine. The sequences of the invention may be used to identify C. glutamicum and related organisms e.g. C. diphtheriae in a subject to detect diphtheria. AAU71863-AAU71972 represent the novel C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nucleic acids encoding glutamicum, useful for and Brevibacterium.
                                                                                 subject to detect diphtheria glutamicum metabolic pathway
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        The present invention provides a number of nucleotide and protein sequences from the Coryneform bacterium Corynebacterium glutamicum. These are useful for identifying the mutation point of a gene derived from a mutant of coryneform bacterium, measuring expression amount and analysing the expression profile or expression pattern of a gene derived from Coryneform bacterium, and identifying a homologue of a gene derived from coryneform bacterium. Coryneform bacteria are useful for producing amino acids, nucleic acids, vitamins, saccharides and organic acids, particularly L-lysine. The present sequence is a protein described in the
                                                                                                                                                                        Novel polynucleotides derived from Coryneform bacteria, for identifying mutation point of a gene, measuring expression of a gene, analyzing expression profile or pattern of a gene and identifying homologous gene
                                                                                                                                                                                                                                                                                                                                                      16-DEC-1999;
07-APR-2000;
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2000JP-00159162.
2000JP-00280988.
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la M, Ozaki A;
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5; Mismatches
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Best Local
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                                                                                                                                                            New metabolic pathway genes of Corynebacterium glutamicum for producing fine chemicals, e.g. lipids, (un)saturated fatty acids, vitamins, cofactors or enzymes used in food, feed, cosmetics or pharmaceutical
                                                                                                                                                                                                                                                                                                                                                                                                                                                        22-DEC-2000; 2000WO-EP013143
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pharmaceutical indu
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The present invention relates to t glutamicum metabolic pathway (MP)

the isolation of Corynebacterium ) proteins, and the polynucleotide

Claim 18; Page 107-108; 176pp; English

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RESULT 12
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Pred. No. 1.1e-18;
5; Mismatches 131
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03-SEP-1999;
23-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       polypeptides from Corynebacterium glutamicum, designated MR proteins, and the DNA sequences which encode them. The invention is useful in identification of C glutamicum and related organisms, mapping of genomes of organisms related to C glutamicum, identification and localization of C glutamicum sequences of interest, evolutionary studies, determination of MR protein regions required for function, modulation of MR protein compounds such activity and modulation of cellular production of desired compounds such
                                                                                                                                                                                                                                                                                                                                                                                                                                        as a fine chemical. The present sequence is that of a novel isolated metabolic pathway regulatory polypeptide of the invention from Corynebacterium glutamicum. Note: This sequence does not appear in the specification but was obtained in electronic format directly from USPTO.
                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             An isolated metabolic pathway regulatory glutamicum, its portion, or its variant, or activity of C. diphtheriae in subject
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Í I TRDR ÞVRALÁBAS BNA Ó LL ÚV Ó SHÓR G G FKGMLL GST SRALL QSÁ Þ C ÞMYVVR
                                                                                                                                  GMVMGSVSGAVVSHAKCPVVVVREDSAVNED-SKYGPVVVGVDGSEVSQQATEYAFAEAE
                                                                                                                                                                   SSILGSTATELAEKAHCPVAVMR--SKVDQPASDINWIVVRMTDAPDNEAVLEYAAREAK 175
                                                                                                                                                                                                                                                                    TEDIVVVAVDGSDASKQAVRWAANTANKRGIPLRLAS--SYTMPQFLYAEGMVPPQELFD
                             ITTHTGIARFLADHDERVQLAVIGG-GEAGQLARLVGPSGHPVFRHAECSVLVVR
                                                               ARGAELVAVHTWMDMQVQASLAGLAAAQQQWDEVERQQTDMLIERLAPLVEKYPSVTVKK
                                                                                               LR-----RRVQDWHHRHPDVRVYP
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                                                                                                                                                                                                                                   DL-AHAERSLREAQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGRYA 117
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; 2000US-00602874.
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Pred. No. 1.1e-18;
5; Mismatches 131
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useful for d
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RESULT 13
ABU25937
ID ABU25937;
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C ABU25937;
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DT 19-JUN-2003 (first entry)
XX
DE Protein encoded by Prokaryotic essential gene #11464.
XX
XX
Antisense; prokaryotic essential gene; cell proliferation; drug
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SX
Corynebacterium diphtheriae.
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EN W0200277183-A2.
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                                                                                                                                                                                                                                                                                                                                                                                                             CC polypeptide or its fragment whose expression is inhibited by the CC antisense nucleic acid; (4) an antibody capable of specifically binding CC the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular CC proliferation or the activity of a gene in an operon required for CC proliferation; (7) identifying a compound that influences the activity of identifying a compound that influences the activity of compound that influences the activity of compound that influences the activity of compound that influences the activity of compound that influences the activity of compound that influences the activity of compound that influences the activity of compound that influences the activity of compound that influences the activity of compound that influences the activity of compound that influences the biological pathway in which a proliferation, or that inhibits groliferation of an compound that inhibits groliferation of an compound that inhibits proliferation of an compound that inhibits proliferation of an compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the gene compound that inhibits the
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Best Local :
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Wall
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                                                                                                                                                                                                                                                                                                                                                            Sequence 300
                                                                                                                                                                                                                                                                                                                                                                                                      ftp.wipo.int/pub/published_pct_sequences
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Trawick JD,
  VMGSVSAAVVSHADCPVVVVRS--DNHVTETNKYGPVVVGVDGSDVSQRATEFAFEEAQA
                                          ILGSTATELAEKAHCPVAVMRSKVDQPASDINW----IVVRMTDAPDNEAVLEYAAREAKL
                                                                                      QSETMDMIEAARVVAHEVAPDIKIGYVIAEGSPIDMLLDMSSDVTMIVMGSRGLGGLSGM
                                                                                                                                QS----AVEAAGKL-----VKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGRYASS
                                                                                                                                                                             VVVAVDGSEASQNAVRWAANTANKRGVPLRLAA----SYTMPQFLYAEGMVPPQELFDEL
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; 2001US-00948993.
; 2001US-0342923P.
; 2002US-00072851.
; 2002US-0362699P.
                                                                                                                                                                                                                                                                        Conservative
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                                                                                                                                                                                                                                                                                          17.8%; Score 249; DB 6; 28.5%; Pred. No. 6.4e-17;
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Forsyth
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Xu HH;
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RESULT 14
AAU62080
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                                                                                                                                                        pustulosis, hypertosis and osteomyelitis) uveltis and endophthalmitis. P. acnes is also involved in infections of bone, joints and the central nervous system, however it is particularly involved in the inflammatory lesions associated with acne vulgaris. A method for detecting the presence or absence of P. acnes in a patient comprises contacting a sample with a binding agent that binds to the proteins of the invention and determining the amount of bound protein in the sample. The polypeptides may be used as antigens in the production of antibodies specific for P. acnes proteins. These antibodies can be used to downregulate expression and activity of P. acnes polypeptides and therefore treat P. acnes infections. The antibodies may also be used as diagnostic agents for determining P. acnes presence, for example, by enzyme linked immunosorbent assay (ELISA). Note: The sequence data for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Propionibacterium acnes vaccinating against and treating acne vulgaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SAPHO syndrome; synovitis; acne; pustulosis; hypertosis; osteomyelitis; uveitis; endophthalmitis; bone; joint; central nervous system; ELISA; inflammatory lesion; acne vulgaris; enzyme linked immunosorbent assay; dermatological; osteopathic; neuroprotectant.
                                                                                             this patent did not form part of the printed specification, obtained in electronic format directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            polypeptides. The proteins and their associated DNA sequences are used in the treatment, prevention and diagnosis of medical conditions caused by P. acnes. The disorders include SAPHO syndrome (synovitis, acne, pustulosis, hypertosis and corrections)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              02-JUN-2000;
07-JUL-2000;
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Zhang Y, Wa
Barth B, Va
                     The invention relates to an isolated polynucleotide (ACF64435-ACF64733) encoding a Propionibacterium acnes protein. The invention also relates to polypeptides encoded by the polynucleotides (ABM35624-ABM64336) and to immunogenic fragments of P. acnes polypeptides. The invention additionally encompasses expression vectors and host cells comprising a polynucleotide of the invention; antibodies against polypeptides of the invention; antibodies against polypeptide of the invention; anethod for stimulating an immune response specific for a P. acnes method for stimulating an immune response specific for a P. acnes
                                                                                                                                                                                                                                                                                                                                                   New Propionibacterium acnes polypeptides and polynucleotides encoding the polypeptide, useful for diagnosing, preventing or treating acne vulgaris, or for stimulating an immune response specific for a P. acnes protein.
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   polypeptide and an isolated T cell population comprising T
                                                                                                                                                                                                                                                                                             Example 1; SEQ ID NO 23275; 1481pp; English
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Vallieve-Douglass
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nilarity 21.8%;
Conservative 46
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ang S, Jen S,
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Benson DR,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cc via this method; a vaccine composition (comprising P. acnes polypeptides, comprising P. acnes polypeptides, polymucleotides, antibodies, fusion proteins, T cell populations, or antigen-presenting cells that express the polypeptide); a method and kit for detecting or determining the presence or absence of P. acnes in a comparison of the polyment of P. acnes in a comparison of the cell populations or antigen-presenting cells that express the proteins, T cell populations or antigen-presenting cells that express the polypeptides are useful for diagnosing, preventing or treating acne collapsets, or for stimulating an immune response specific for a P. acnes for nucleic acid hybridisation. The vaccine composition is useful for the composition is useful for the composition acnes, or for treating acne, and the kit is useful for performing a diagnostic assay. The present comparison of an immune response against P. acnes, or for treating acne, and the kit is useful for performing a diagnostic assay. The present composition. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly contained in the composition of compart of the printed specification, but was obtained in electronic format directly
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                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           printed specification, but was obtained in electron WIPO at ftp.wipo.int/pub/published_pct_sequences
       155
                                                       137
                                                                                                       96
                                                                                                                                                                                                                                                  39
                                                                                                                                                       90 WGVVYD-
                                                                                                                                                                                                                                                                                                                                                   65;
                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                  VRMTDAPDNEAVLEYAAREAKLRQAPILALGGRPEELREIPDGEFERR----VQDWHHRHP 211
                                                                                                     LVEASRDAEMICVGSVGIGRYASSILGSTATELAEKAHCPVAVM-RSKVDQPASDINWIV 154
                                                       LADRSADAQLVVLGRRATSGLERMFVGSTSVAVAGMSAAPVVVVISRASTPDPTGGKKCVA 196
                                                                                                                                                                                                  ----YDRDLAHAERSLREAQSAVEAAGKLV-------KIETDIPRGPAGPV
                                                                                                                                                                                                                                                                                                SGRGEPTMKTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTHPSPDD-----
                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                    10.8%;
                                                                                                                                                     ----PTALQDAGQVVVDDAIHVATERGMDPDRISGEVVLGNPAAI 136
                                                                                                                                                                                                                                                                                                                                                   46;
                                                                                                                                                                                                                                                                                                                                                Score 151; DB 6;
Pred. No. 1.1e-06;
6; Mismatches 135
                                                                                                                                                                                                                                                                                                                                                                                                Length 316;
                                                                                                                                                                                                                                                                                                                                                     Indels
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Search completed: March Job time : 73.3158 secs 23, 2006, 05:10:53

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257

HVEVETRVLSGEPVDALVDLSGNVDLLVIGMKKHPILGWTAGGVSRAIMAHAQSPLAI 314 DVRVYPITTHTGIARFLADHDERVOLAVIGGGEAGQLARLVGPSGHPVFRHAECSVLV 269 VAVGPQSVGTAAVGFGFAEADHRGCKLLAVTVPGNDSEEVHDEALKRLNEVVKPLANKHP

|                                       | Copyright   |                | GenCore version 5.1.7 (c) 1993 - 2006 Bioccelerat                         | ation Ltd.   |
|---------------------------------------|---|----------------|---|--|
| OM protein - prot                     | otein search  | , us           | ing sw model  |  |
| Run on:                               | March 23, 2   | 2006,          | 05:11:18 ; Search time (without ali 2418.401 Mil                          | e 10.8216 Seconds<br>lignments)<br>illion cell updates/sec |
| Title:<br>Perfect score:<br>Sequence: | US-10-617-038-27<br>1397<br>1 MSGRGEPTMKTIIVGIDGSH. | )38-2<br>(KTII |   | GPSGHPVFRHAECSVLVVRR 272                                   |
| Scoring table:                        | BLOSUM62<br>Gapop 10.0                              | , Ga           | pext 0.5  |  |
| Searched:                             | 283416 segs   | , 96           | 216763 residues   |  |
| Total number of                       | hits satisf   | ying           | chosen parameters:  | 283416   |
| Minimum DB seq<br>Maximum DB seq      | length: 0<br>length: 2000                           | 0000000        | 00  |  |
| Post-processing                       | : Minimum Ma<br>Maximum Ma<br>Listing fi            | tch            | 0%<br>100%<br>45 summaries  |  |
| Database :                            | PIR 80:* 1: pir1:* 2: pir2:* 3: pir3:* 4: pir4:*    |                |   |  |
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| ult<br>No. Scor                       | ery<br>tch Ler                                      | 80 d:          | ID  | escripti   |
|                                       | 9.0   |                | G70572<br>C70942  | hetical phetical p   |
| 3 357.5<br>4 298.5                    | <br>  | 8 4 n          | G70645<br>A70942  | hetical<br>hetical   |
| ·                                     | 9.  |                | F70572  | ical I   |
| 22                                    | 7.4.0   |                | B70758<br>T37029  |  |
| 22                                    | 6.1   |                | T37031  | ical I   |
| 2 1                                   | 3.3   |                | T36949<br>T36963  | cal I  |
| 3 16                                  | 1.5   |                | T37036  | cal I  |
| , U 1                                 | 1 80 -  |                | C86231  | hypothetical prote   |
| 7 6                                   | . i. i  |                | F84918  | , E, F   |
| ωa                                    | ن.<br>د   |                | A75310  | F F  |
| 10                                    | 5 1   |                | A90454  | ξξ,  |
| 2 10                                  |   |                | B89955  | red hypo   |
| 4 10                                  | .7 1  |                | T30874  | virginiamycin S sy   |
| 6 10                                  | . o   |                | E90349  | conserved hypothet   |
| 1.5                                   |   |                | 120039<br>H87082  | conserved hypothet   |
| •                                     |   |                |   | 7  |

### ALIGNMENTS

hypothetical protein Rv2624c - Mycobacterium tuberculosis (strain H37RV)
C;Species: Mycobacterium tuberculosis
C;Species: Mycobacterium tuberculosis
C;Species: Nycobacterium tuberculosis
C;Accession: G70572
R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, S.; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, S.
Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S.
Nature 393, 537-544, 1998
A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G.
A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete genome (A;Accession: G70572
A;Accession: G70572
A;Accession: G70572
A;Accession: G70572
A;Accession: G70572
A;Residues: 1-272 <COL>
A;Cross references: UNIPROT:006188; UNIPARC:UPI00000D5EA1; GB:295387; GB:AL123456; NID:g.
C;Genetics:
A;Gene: Rv2624c δ 밁 ঠ 밁 δ 밁 5 밁 S Query Match 100.0%; Score 1397; DB 2; Best Local Similarity 100.0%; Pred. No. 3.8e-99; Matches 272; Conservative 0; Mismatches 0; 181 181 241 121 121 ᆫ r MSGRGEPTMKTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTHPSPDDYDRDL MSGRGEPTMKTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTHPSPDDYDRDL 60 GGGEAGQLARLVGPSGHPVFRHAECSVLVVRR 272 LGSTATELAEKAHCFVAVMRSKVDQPASDINWIVVRMTDAPDNEAVLEYAAREAKLRQAP 180 LGSTATELAEKAHCPVAVMRSKVDQPASDINWIVVRMTDAPDNEAVLEYAAREAKLRQAP 180 ILALGGRPEELREIPDGEFERRVQDWHHRHPDVRVYPITTHTGIARFLADHDERVQLAVI 240 ILALGGRPEELREIPDGEFERRVQDWHHRHPDVRVYPITTHTGIARFLADHDERVQLAVI 240 Indels Length 272; 0 Gaps 60

241

GGGEAGQLARLVGPSGHPVFRHAECSVLVVRR

272

29

103

143 N

AD1139

conserved hypothet

RESULT 2
(770942
hypothetical protein Rv2028c - Mycobacterium tuberculosis (strain H37RV)
(5)Species: Mycobacterium tuberculosis
(5)Date: 17-Jul-1998 #sequence\_revision 17-Jul-1998 #text\_change 09-Jul-2004

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R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, C.; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, Sajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, 537-544, 1998

A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G. A;Itle: Deciphering the biology of Mycobacterium tuberculosis from the complete genome A;Fitle: Deciphering the biology of Mycobacterium tuberculosis from the A;Accession: C70942

A;Accession: C70942

A;Status: preliminar; nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                           A;Status: p. DNA
A;Molecule type: DNA
A;Residues: 1-268 <COL>
A;Cross references: UNIPROT:P95192;
A;Cross references: Btrain H37Rv
                                                                                                                                                                                                                                                                                                                                                                                         R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, C.; Connor, R.; Davies, R.; Devlin, K.; Feltvell, T.; Gentles, S.; Hamlin, N.; Holroyd, Sajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, 537-544, 1998

A;Authbors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G.
A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete genom, A;Reference number: A70500; MUID:98295987; PMID:9634230

A;Accession: G70645
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C;Species: Mycobacterium tuberculosis
C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 09-Jul-2004
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Residues: 1-279 < COL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: DNA
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                                                                                                                                          Query Match
Best Local Similarity
Matches 100; Conser
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                                                  RAVVVGIDGSRAATHAALWAVDEAVNRDIPLRLVYVIDPSQLSAAGEGGGQSAARAALHD
                                                                              KTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTHPSPDDYDRDLAHABRSLRE
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  AQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGRYASSILGSTATELA
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36.5%;
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                                                                                                                                        Score 357.5; DB 2;
Pred. No. 5.5e-20;
35; Mismatches 110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 416; DB 2
Pred. No. 2e-24;
                                                                                                                                                                                                                                                                                                        UNIPARC: UPI00000D603B; GB: Z83867; GB: AL123456;
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  hypothetical protein Rv2005c - Mycobacterium tuberculosis (strain C;Species: Mycobacterium tuberculosis C;Species: Mycobacterium tuberculosis C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 09 C;Accession: C70759  
R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Comnor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; H. Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Nature 393, 537-544, 1998
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A;Cross-references: UNIPROT:053472;
A;Experimental source: strain H37Rv
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, 537-544, 1998
A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G. A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete A;Reference number: A70500; MUID:98295987; PMID:9634230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A70942
hypothetical protein Rv2026c - Mycobacterium tuberculosis (strain H37RV)
C;Species: Mycobacterium tuberculosis
C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R;Cole, S.T.; Brosch, R.; Connor, R.; Davies, R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Residues: 1-294 <COL>
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245
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                                                                                                                                                                                        LLGSISTALLHHARCPVAIIHSGNGATPDSDAP-VLVGIDGSPASEAATALAFDEASRRR
                                            ARFLADHDERVQLAVIGG-GEAGQLARLVGPSGHPVFRHAECSVLVVR 271
                                                                                                                                                                                                                                     ILGSTATELAEKAHCPVAVMRS-KVDQPASDINWIVVRMTDAPDNEAVLEYAAREAKLRQ
                                                                                                                                                                                                                                                                                     AQQVIEQAREALTNSLGESKPPQVHTELVFSNVVPTLIDASQQAWLMVVGSQGMGALGRL 127
                                                                                                                                                                                                                                                                                                                                    AERSLREAQSAVE---AAGKLVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGRYASS
                                                                                                                                                                                                                                                                                                                                                                                                                                   IIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPT------HPSPDDYDRDLAH
ARWLLEHSEQAQLVVVGSHGRGGFSGMLLGSVSSAVAHSVRIPVIVVR
                                                                                            VDLVALHAWTDLGMFPVLGMDWREREKREAE--VLAERLAGWQEQYPDVRVHRSLVCDKP
                                                                                                                                           A-----PILALGGRPEELREIPDGEFERRVQDWHHRHPDVRVYPITTHTGI
                                                                                                                                                                                                                                                                                                                                                                                      ILVGVDGSAQSNAAVAWAAREAVMRQLPITLLHIVAPVVVGWPVGQLYANMTEWQKD--N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FVADSHSAHELCGAYQPG-----CAVLTVR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GSALCPVAVIHPSPAEPATTSQVSAVVAEV----DNGVVLRHAFEEARLRGVPLRAVA--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EKAHCPVAVMRSKVDQPA--SDINWIVVRMTDAPDNEAVLEYAAREAKLRQAPILALGGR 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AVIGGGEAGQLARLVGPSGHPVFRHAECSVLVVR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PEELREIPDG------EFERRVQDWHHRHPDVRVYPITTHTGIARFLADHDERVQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -VHAAETPDDVEQGSRLAHVHLSRRLAHWTRLYPEVRVDRAIAGGSACRHLAANAKPGQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21.4%;
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Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; H
J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 298.5; DB 2
Pred. No. 1.9e-15;
3; Mismatches 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       UNIPARC: UPI00000D6040;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence
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Parkhill, J.; Garnier, T.; Churcher, C.; Harris, Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N. J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares,

Hamlin, N.;

D.; Gordon,

Holroyd, S.

17-Jul-1998 #text\_change 09-Jul-2004

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A; NEGLUS; PAZZES DIA
A; Molecule type: DNA
A; Residues: 1-297 <COL>
A; Cross-references: UNIPROT:006189; UNIPARC:UPI000003326C; GB:Z95387; GB:AL123456;
A; Cross-referental source: strain H37Rv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, 537-544, 1998

Nature 393, 537-544, 1998

N;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G. A;Authors: Sqares the biology of Mycobacterium tuberculosis from the complete genomalization and the complete genomalization and the complete genomalizations. F70572

N;Accession: F70572
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A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete genome
A;Reference number: A70500; MUID:98295987; PMID:9634230
A;Accession: C70759
A;Status: preliminary; nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
A;Residues: 1-295 <COL>
A;Cross-references: UNIPROT:Q10851; UNIPARC:UPI000013B62F; GB:Z74025; GB:AL123456; NID:g
A;Experimental source: Strain H37Rv
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hypothetical protein Rv2623 - Mycobacterium tuberculosis (strain H37RV)
C;Species: Mycobacterium tuberculosis
C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 09-Jul-2004
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      85;
                                                                                                                                                                                                                                                                     84;
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SILGSTATELAEKAHCPVAVMRSKVD-QPASDINWIVVRMTDAPDNBAVLEYAAREAKLR 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AHAERSLREAQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGRYASSI::: |: || || || || || || :::::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KLVQKSASAQLVVVGSHGRGGLTGMLLGSVSNAVLHAARVPVIVARQ 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FLADHDERVQLAVIGG-GEAGQLARLVGPSGHPVFRHAECSVLVVRR 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APILALGGRPE-ELREIPDGEFE-----RRVQDWHHRHPDVRVYPITTHTGIAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LGSTATELAEKAHCPVAVMRSKVDQPASDINW--IVVRMTDAPDNEAVLEYAAREAKLRQ 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VVVGVDGSLESDAAACWGATDAAMRNIPLTVVHVVNADVATWPPMPYPETWGVWQEDEGR
                                                                        HL--IDDALKVVEQASLRAGP-PTVHSEIVPAAAVPTLVDMSKDAVLMVVGCLGSGRWPG
                                                                                                                   DLAHAERSLREAQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGRYAS 118
                                                                                                                                                                     I I VG I DOS PAAQVAVRWAARDAELRKI PLTLVHAVS PEVATWLEVPLPPGVLRWQQDHGR
                                                                                                                                                                                                                   IIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKP-----THPSP-----DDYDR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VELIAVHAWSDVEVVELPGLDFSAVQQEAELSLAERLAGWQERYPDVPVSRVVVCDRPAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LGSVSSSLVRRAGCPVAVIHSD-DAVIPDPQHAPVLVGIDGSPVSELATAVAFDEASRRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QIVANAVKLAKEAVGADRKL-SVKSELVFSTPVPTMVEISNEAEMVVLGSSGRGALARGL
                                                                                                                                                                                                                                                                19.1%; Score 267; DB 2; Length 29.1arity 29.3%; Pred. No. 4.9e-13; Conservative 42; Mismatches 131; Indels
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Pred. No. 1.7e-14;
48; Mismatches 126;
                                                                                                                                                                                                                                                                                                               Length 297;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
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                                                                        126
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gordon,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  genome
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                                                                                                                                                                hypothetical protein SCJ12.10c - Streptomyces coelicolor C;Species: Streptomyces coelicolor C;Species: Streptomyces coelicolor C;Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 09-Ju1-2004 C;Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 09-Ju1-2004 C;Accession: T37029 R;Murphy, L.; Harris, D.; Thomson, N.R.; Parkhill, J.; Barrell, B.G.; Rajan submitted to the EMBL Data Library, August 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 7
B70758
                                                                   A;Reference number: Z21619
A;Accession: T37029
A;Status: preliminary; translated
A;Molecule type: DNA
  A;Residues: 1-288 <MUR>
A;Cross-references: UNIPROT:Q9RI48;
A;Experimental source: strain A3(2)
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hypothetical protein Rv1996 - Mycobacterium tuberculosis (strain H37RV)
C;Species: Mycobacterium tuberculosis
C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 09-Jul-2004
C;Accession: B70758
C;Accession: B70758
R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D;
Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.;
Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Status: preliminary; nucleic acid sequence not shown; translation not A;Molecule type: DNA
A;Moseidues: 1-317 <COL>
A;CROSS-references: UNIPROT:Q10862; UNIPARC:UPI000013B4FB; GB:Z74025; GB
A;Experimental source: strain H37Rv
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, 537-544, 1998
A;Authors: Sqares, F. Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G. A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete A;Reference number: A70500; MUID:98295987; PMID:9634230
A;Accession: B70758
                                                                                                                                                                                                                                                                                 130 RGQGAVAGALLGSVSSSLVRHAHGPVAVIPEE-PRPARPPHAPVVVGIDGSPTSGLAAEI 188
                                                                                                                                                                                                                                                                                                                                                                                                                       70 VEHSYLVAQAHQIVEQAHKVALEASSSGRAAQITGEVLHGQIVPTLANISRQVAMVVLGY 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12 IIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTHPSPD-----DYDRD-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VGIGRYASSILGSTATELAEKAHCPVAVMRSKVDQPASDINW-IVVRMTDAPDNEAVLEY 169
VVVHKVVVCDRPAPRILELAQTAQLVVVGSHGRGGFPGMHLGSVSRAVVNSGQAPVIVAR
                                                                 VRVYPITTHTGIARFLADHDERVQLAVIGG-GEAGQLARLVGPSGHPVFRHAECSVLVVR 271
                                                                                                                                          AFDEASRRGVDLVALHAWSDMGPLDFPRLNWAPIEWRNLEDEQEKMLARRLSGWQDRYPD 248
                                                                                                                                                                                                    NVDLVALHAWSDVDVSEWPGIDWPATQSMAEQVLAERLAGWQERYPNVAITRVVVRDQPA 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RFLADHDERVQLAVIGG-GEAGQLARLVGPSGHPVFRHAECSVLVVR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RQLVQRSEEAQLVVVGSRGRGGYAGMLVGSVGETVAQLARTPVIVAR 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18.5%;
28.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 258.5; DB 2
Pred. No. 2.4e-12;
7; Mismatches 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -DGEFERRVODWHHRHPDVRVYPITTHTGIA 225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
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from

GB/EMBL/DDBJ

B.G.; Rajandream,

UNIPARC:UPI00000DB3E4; EMBL:AL109989; PIDN:CAB53422

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RESULT
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A; Molecule type: DNA
A; Residues: 1-283 <SEE>
A; Cross-references: UNIPROT: Q9RIY5;
A; Cross-references: UNIPROT: Q9RIY5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Accession: T36962
R;Seeger, K.J.; Harris, D.; Thomson, N.R.; Parkhill submitled to the EMBL Data Library, September 1999 A;Reference number: Z21607
A;Accession: T36962
A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hypothetical protein SCJ1.29c - Streptomyces coelicolor
C;Species: Streptomyces coelicolor
C;Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 09-Jul-2004
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A;Gene: SCOEDB:SCJ12.10c
                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;Genetics:
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                                                                                                                                 174
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                                                                 234
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       116
                                                                                                                                                                                                 116 ADRLIGSVSRTVAAGSDCPVVVLRGNHDNRAIGGRNGRIVVGVGEV--SASVLRLAFMEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      230
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                                                                                                                                                                                                                                                                                                                                                                   12 IIVGIDGSHAAITAALWGVDEAISRAVPLRLV-----SVIKPTHPSPDDYDRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12 IIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVI-----
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                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
87; Conserv
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                                                                 EGPARAVLPAASAEAGLLVIGRRTQGRLGRV----AHAVLHRSACPVVVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RRRTAEGPGSRVLSAASHEADLLVVGRRRPGQFGHRLGRVAHTLLHHSACPVAVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LAGILLIGSVSLTVATMSDCFVVVTRGDHDDRAAGGGRRGRIVVGVADAF--TAAVRFACE 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YDRDLAHAERSLREAQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGR 115
                                                                                                HTGIARFLADHDERVQLAVIGGGEAGQLARLVGPSGHPVFRHAECSVLVV
                                                                                                                                 RLROVPVAAVRAWRCPAHETIDHPLPAGEPARRYEERAARELEAALEDAPPDVAVRRYTV
                                                                                                                                                              KIRQAPILALGGRPEBLRB-----IPDGBPBRRVQDWHHRH------PDVRVYPITT
                                                                                                                                                                                                                                ASSILGSTATELAEKAHCPVAVMRSKVDQPA--SDINWIVVRMTDAPDNEAVLEYAAREA 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YASSILGSTATELAEKAHCPVAVMRSKVDQPASD---INWIVVRMTDAPDNEAVLEYAAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        I---LAVATRRARRHHPDLAVTTEATAEEPEY-----VLLREARNASAVILGTRGRGE
                                                                                                                                                                                                                                                                                                 LAHAERSLREAQSAVEAAGK---LVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGRY 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YPITTHTGIARFLADHDERVQLAVIGGGEAGQLARLVGPSGHPVFRHAECSVLVV 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MVVGVDGSESSLGAVDWAADEAALHEVPLRIVHAYRWDRYEGASLARELGKPSGHVTTDD
                                                                                                                                                                                                                                                                  IL-----AAAAIRAGRRHPDLV-VTTETVPDEAEHALICAGRNASMIVMGSRGRSGI 115
                                                                                                                                                                                                                                                                                                                                  LVVGVDGSEPSLRAVDWAADEAALHAVPLWVVFGDLWERYEGAALAREPGKPSTDMQADD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EARRRGAALDAVRAWRCPTHDTVDHPLLAGTPERLHEERAAKELEAALAD---APADVRL
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                                                                                                                                                                                                                                                                                                                                                                                                  Score 230; DB 2
Pred. No. 3e-10;
35; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     UNIPARC:UPI00000DB39B; EMBL:AL109962; PIDN:CAB53147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Parkhill,
                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                     122;
                                                                                                                                                                                                                                                                                                                                                                                                                               Length 283;
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                                                                                                  270
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RESULT 11
T36949
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                                                                                                                                                                                                           A;Molecule type: DNA
A;Residues: 1-294 <SEE>
A;Cross-references: UNIPROT:Q9RIZ8;
A;Experimental source: strain A3(2)
C;Genetics:
A;Gene: SCOEDB:SCJ1.16c
                                                                                                                                                                                                                                                                                                                                                                                                                                           conserved hypothetical protein SCJ1.16c - Streptomyces coelicolor
C;Species: Streptomyces coelicolor
C;Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Reference number: Z21619
A;Accession: T37031
A;Status: prelininary; translated
A;Molecule type: DNA
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                                                                                                                                                                                                                                                                                                                                                                                                           R;Seeger,
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A;Gene: SCOEDB:SCJ12.12c
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A;Experimental source: strain A3(2)
                                                                                                                                                                                                                                                                                                                               A;Status: preliminary; translated
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                                                                                                                                                     Query Match
Best Local
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Best Local
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LAHAERSIREAQSAVEAAGKIVKIETDIPRGPAGPVIVEASRDAEMICVGSVGIGRYASS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ECSVLVV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SSILGSTATELAEKAHCPVAVMR-----SKVDQPASDINWIVVRMTDAPDNE
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                                                           LVVGVDGSDGSLLAIDWAVDEAQRQGLPLRLVYASLWERYEGALPAMGRERPS-----E
                                                                                               IIVGIDGSHAAITAALWGVDEAISRAVPLRLV-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTPVAVV
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25.4%;
                                                                                                                                   15.7%; Score 220; DB 2; 24.9%; Pred. No. 1.8e-09; ive 43; Mismatches 133
                                                                                                                                                                                                                                                                                                                                                                                     Thomson, N.R.; Parkhill, J.;
Library, September 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  42; Mismatches 130;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 224.5; DB 3
Pred. No. 8.6e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             from
                                                                                                                                                                                                                                                                                                                                 from
                                                                                                                                                                                                                                                                       UNIPARC: UPI00000DB38E; EMBL: AL109962;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     UNIPARC: UPI00000DB3E6; EMBL: AL109989;
                                                                                                                                                                                                                                                                                                                                 GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----LALGGRP-EELREIPDGEFERRVQDWHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2
                                                                                                                                                                       Length 294;
                                                                                                                                       Indels
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                                                                                               --SVIKPTHPSPDDYDRD
                                                                                                                                                                                                                                                                                                                                                                                                             Barrell, B.G.; Rajandream,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301;
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                                                                                                                                       44;
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                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                           PIDN: CAB53134.3
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                       119
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T37036

hypothetical protein - Streptomyces coelicolor

C;Species: Streptomyces coelicolor

C;Date: 03-Dec-1999 #sequence_revision 03-Dec-1999

C;Accession: T37036
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A; Residues: 1-328 <SEE>
A; Cross-references: UNIPROT: Q9RIY4;
A; Cross-references: strain A3(2)
A;Accession: T37036
A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                              R;Murphy, L.; Harris, D.; Thomson, N.R.; Parkhill, submitted to the EMBL Data Library, August 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           hypothetical protein SCJ1.30c - Streptomyces coelicolor C;Species: Streptomyces coelicolor C;Species: Streptomyces coelicolor C;Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 09-Jul-2004 C;Accession: T36963
                         A;Reference number: Z21619
A;Accession: T37036
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A; Accession: T36963
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ঠ
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Best Local S
Matches 82
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
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                                                                                                                                                                                                                                                                                                          CSVLVV 270
                                                                                                                                                                                                                                                                                                                                               WRQSYPDVEVVEASRPGSPADLLAEASHEASLVVVGRRIRPSPLGVHIGAVAHAVLHRVS 319
                                                                                                                                                                                                                                                                                                                                                                                     WHIRHPDVRVYPITTHTGIARFLADHDERVQLAVIGGG-EAGQLARLVGPSGHPVFRHAE
                                                                                                                                                                                                                                                                                                                                                                                                                              LSFAFDEAQRRGTAVHVVSGWRPPPYYPSLTAGGVPDQ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LEYAAREAKLRQA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGSVGQSVIAHSETPVVLVRAGEQAAGEHVVDSVGVPPAANRRPVVVGLDIGSPD-DGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LGSTATELAEKAHCPVAVMRS-----KVDQ----PASDINWIVVRMTD--APDNEAV 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ERSLREAQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAEMICVGS---VGIGRYASSI 120
                                                                                                                                                                                                                                                                    APVAVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ERVPQKVGEGLRLRHPGVVVTSDQRSGPPADTLVRDADGAELLVLGSRAPSGLGGF---L
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTHTGIARFLADHDERVQLAVIGG-GEAGQLARLVGPSGHPVFRHAECSVLVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ELDVVRAWRCPAYENADEGAPSDDSEDQP----ERRASALIDTLVAEAAAEHPSVRLRKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ILGSTATELAEKAHCPVAVMRSKVDQPASDINWIVVRMTDAPDNEAVLEYAAREAKLRQA 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QVMAENI VGTAAERVRRYDPGLTVDTDTVPAEAVSALLAEGRHATAVVTGSRGRGELKGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13.3%;
nilarity 26.8%;
Conservative 3
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 186; DB 2;
Pred. No. 8.2e-07;
B; Mismatches 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                UNIPARC:UPI00000DB39C; EMBL:AL109962; PIDN:CAB53148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -PILALGGRPEELREIPDGEFERRVQD-----
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                                                                                                                      #text_change 09-Jul-2004
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                                                                                   Barrell,
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                                                                                                                                                                                                                                                                                                                                                                                                                              -GVARRKAADLTRLLLP
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                                                                                   B.G.; Rajandream,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B.G.; Rajandream,
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А.
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  hypothetical protein [imported] - Arabidopsis thaliana C;Species: Arabidopsis thaliana (mouse-ear Cress) C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #te: C;Accession: C86231 R.; Palm, C.J.; Federspiel, I R;Theologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, I Chin, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conwansen, N.F.; Hughes, B.; Huizar, L.
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A; Molecule type: DNA, R; Residues: 1-152 <SEE's A; Residues: 1-152 <SEE's A; Cross-references: UNIPROT: Q9RIZ3; UNIPARC: LA; Experimental source: strain A3(2) C; Genetics: C; Genetics: A; Gene: $COEDB: $CU1.21 C; Superfamily: Escherichia coli ybdQ protein
RESULT
C86231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        hypothetical protein SCJ1.21 - Streptomyces coelicolor C;Species: Streptomyces coelicolor C;Species: Streptomyces coelicolor C;Date: 03-Dec.1999 #sequence_revision 03-Dec.1999 #text_change 09-Jul-2004 C;Accession: T36954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
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A;Residues: 1-201 <MUR>
A;Cross-references: UNIPROT:Q9RI41;
A;Experimental source: strain A3(2)
C;Genetics:
A;Gene: SCOEDB:SCJ12.19c
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A;Status: preliminary; translated
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R; Seeger, K.J.; Harris, D.; submitted to the EMBL Data
                                                                                                                                                                                                                                                                                                                                Query Match
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                                                                        118 AFARAMLGSVSQRCAQHAACPVVVVRQETE 147
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                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                 DYDRDLAHAERSLREAQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RVVARADHPVVLVRAGRSAADEHLPÄÄDGLAPEEIPETPYRDVVLGLRVDRPCDE-VLDF 181
                                                                                                         RYASSILGSTATELAEKAHCPVAVMRSKVD 144
                                                                                                                                               DPDFDLEQARERFAAELEATFPGERPPGLKEILVEGDPSETLIRASQGAELLVVGRRGRG
                                                                                                                                                                                                                                                        EPTMKTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTH----PS-----PD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AFEAARRR 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ELAEKAHCPVAVM---RSKVDQ--PASD-----INWIVVRMTDAPDNEAVLEY 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LEEAVRSVRSAHPGLRITERLVCDATVTALVTAADDAEMLVLGSPGPPGPVGGFVTGSVSQ 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LREAQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGRYASSILGSTAT 126
                                                                                                                                                                                                                       EPTAR-VVVGVDGSPSSYAALRWA--DRYARAVG----GVVEAVHVWDTPSAVGFAGPAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IAVGIDRSPASLAAAHWAAHEARRRGSGITLVHVWHRRARPTP--YLRVGGTERAWAERT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAREAKLR 177
                                                                                                                                                                                                                                                                                              Conservative
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                                                                                                                                                                                                                                                                                                             10.7%;
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Pred. No. 0.0002;
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Pred. No. 3.9e-05;
0; Mismatches 73;
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September 1999
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C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso, Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.;

02-Mar-2001 #text\_change 09-Jul-2004

| Search completed: March 23, 2006, 05:26:34<br>Job time : 12.8216 secs | Qy 146 PA 147<br> <br>Db 173 SA 174 | Qy 88 PRGPAGPVLVEASRDAEMICVGSVGIGRYASSILGSTATELAEKAHCPVAVMRSKVDQ 145 | Qy 55 | Qy 8 TMKTIIVGIDGSHAAITAALMGVDEAISRAVPLRLVSVIKPTHPSPD 54 ::  : | Query Match 8.8%; Score 122.5; DB 2; Length 174; Best Local Similarity 22.5%; Pred. No. 0.025; Matches 41; Conservative 25; Mismatches 61; Indels 55; Gaps 5; | Nature 408, 816-820, 2000  A;Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, B.; Kim, C.A.; Li, J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marziali Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.  A;Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon, ker, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.  A;Title: Sequence and analysis of chromosome 1 of the plant Arabidopsis.  A;Reference number: A86141; MUID:21016719; PMID:11130712  A;Accession: C86231  A;Status: preliminary  A;Molecule type: DNA A;Residues: 1-174 <sto- 1<="" a;cross-references:="" a;map="" fc;genetics:="" gb:ae005172;="" nid:g2160182;="" position:="" th="" uniparc:upi00000a5eec;="" uniprot:004495;=""></sto-> |
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RM MEDILINE=22709107; PubMed=12788972; DOI=10.1073/pnas.1130426100;

RA Garnier T., Eiglmeier K., Camus J.-C., Medina N., Mansoor H.,

RA Pryor M., Duthoy S., Grondin S., Lacroix C., Monsempe C., Simon S.,

RA Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler P.R.,

Parkhill J., Barrell B.G., Cole S.T., Gordon S.V., Hewinson R.G.;

"The complete genome sequence of Mycobacterium bovis.";

RT "The complete genome sequence of Mycobacterium bovis.";

RT Proc. Natl. Acad. Sci. U.S.A. 100:7877-7882(2003).

RML Proc. Natl. Acad. Sci. U.S.A. 100:7877-7882(2003).

RML Proc. Natl. Acad. Sci. U.S.A. 100:7877-7882(2003).

RML Proc. Natl. Acad. Sci. U.S.A. 100:7877-7882(2003).

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RML Proc. Natl. Acad. Sci. U.S.A. 100:7877-7882(2003).
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales; Corynebacterineae; Mycobacterium; Mycobacterium tuberculosis complex.
NCBI_TaxID=1765;
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STRAIN=CDC 1551 / Oshkosh;

MEDLINE=22206494; PubMed=12218036;

MEDLINE=22206494; PubMed=12218036;

DOI=10.1128/JB.184.19.5479-5590.2002;

Pleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O.,

Peterson J.D., DeBoy R.T., Dodson R.J., Gwinn M.L., Haft D.H.,

Hickey E.K., Kolonay J.F., Nelson W.C., Umayyam L.A., Ermolaeva M.D.,

Salzberg S.L., Delcher A., Utterback T.R., Weidman J.F., Khouri H.M.,

Gill J., Mikula A., Bishai W., Jacobs W.R. Jr., Venter J.C.,
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006188; Q7D5V6;
01-JUL-1997 (TrEMBLrel. 04, Created)
01-JUL-1997 (TrEMBLrel. 04, Last sequence update)
13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
Hypothetical protein (Universal stress protein family)
OrderedLocusNames=MT2699, RV2624c;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GO; GO:0006950; P:response to InterPro; IPR006015; Usp. InterPro; IPR006016; UspA. Pfam; PF00582; Usp; 2
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TubercuList; Rv2624c; -.
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EMBL; AE000516; AAK47015.1;
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium;
Mycobacterium tuberculosis complex.
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J. Bacteriol. 184:547
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272 AA;
LGSTATELAEKAHCPVAVMRSKVDQPASDINWIVVRMTDAPDNEAVLEYAAREAKLRQAP
                                                             AHAERSLREAQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGRYASSI
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A Garnier T., Eiglmeier K., Camus J.-C., Medina N., Mansoor H.,
A Pryor M., Duthoy S., Grondin S., Lacroix C., Monsempe C., Simon S.,
A Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler P.R.,
A Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler P.R.,
A Parkhill J., Barrell B.G., Cole S.T., Gordon S.V., Hewinson R.G.;
T "The complete genome sequence of Mycobacterium bovis.";
Proc. Natl. Acad. Sci. U.S.A. 100:7877-7882(2003).
EMBL, BX248341; CAD96906.1; -; Genomic DNA.
R GO; GO:0006950; P:response to stress; IEA.
R GO; GO:0006950; P:response to stress; IEA.
R InterPro; IPR006016; UspA.
R Pfam; PF00582; Usp; 1.
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01-OCT-2003 (TrEMBLrel. 25, Last sequence up
01-MAR-2004 (TrEMBLrel. 26, Last annotation
Hypothetical protein Mb2053C.
OrderedLocusNames=Mb2053C;
                                                                                                                                                                                                                                                                                                                                                                              Complete proteome; Hypothetical SEQUENCE 279 AA; 29441 MW; 5
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NUCLEOTIDE SEQUENCE.

STRAIN=CDC 1.51 / Oshkosh;

MEDLINE=22206494; PubMed=12218036;

MEDLINE=22206494; PubMed=12218036;

DOI=10.1128/JB.184.19.5479-5490.2002;

Pleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O.,

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J. Bacteriol. 184:5479-5490
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01-JUN-1998 (TrEMBLrel. 06, Created)
01-JUN-1998 (TrEMBLrel. 06, Last sequence update)
13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
189
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                       TIIVGIDGSHAAITAALMGVDEAISRAVPLRLVSVIKPTHPSPDDYD---RDLAHAERSL:|:|||||| |: |: || || :: || || || ::
                                                                                                                                                                                                                                 SIVVGIDGSKPAVQAALWAVDEAASRDIPLRLLYAIEPDDPGYAAHGAAARKLAAAENAV
QSGVGDTGDDVRASLDRWLARWQPRYPDVRVQSAAVHGELLDYLAGLGRSVHMVVLSASD
                                                        PEELREIPD----GEFERRVQDWHHRHPDVRVYPITTHTGIARFLADHDERVQLAVIGGGE
                                                                                                                   LALSAQCPVAIVRPHRVPIGRDAAWIVVEADGSSDIGVLLGAVMAEARLRDSPVRVVTCR
                                                                                                                                                                         LAEKAHCPVAVMRSKVDQPASDINWIVVRMTDAPDNEAVLEYAAREAKLRQAPILALGGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       184:5479-5490(2002).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29.8%; Score 416; DB 2; 36.8%; Pred. No. 7.8e-24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -; Genomic_DNA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     stress;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches 116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 279;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CRC64;
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Best Local
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01-OCT-2003 (TrEMBLrel. 25, Cre
01-OCT-2003 (TrEMBLrel. 25, Lar
01-MAR-2004 (TrEMBLrel. 26, Lar
Hypothetical protein Mb3158c.
OrderedLocusNames=Mb3158c;
               LT 6
92 MYCTU
PS5192_MYCTU PRELIMINARY; PRT; 268 AA.
PS5192; Q7D624;
01-MAY-1997 (TrEMBLrel. 03, Created)
01-MAY-1997 (TrEMBLrel. 31, Last sequence update)
13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
Hypothetical protein (Universal stress protein family).
OrderedLocusNames=MT3220, RV3134c;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-AF2122/97;
STRAIN-AF2122/97;
BOLLINE-22709107; PubMed=12788972; DOI=10.1073/pnas.1130426100;
Garnier T., Eiglmeier K., Camus J.-C., Medina N., Mansoor H.,
Pryor M., Duthoy S., Grondin S., Lacroix C., Monsempe C., Simon S.
Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler P.R.
Parkhill J., Barrell B.G., Cole S.T., Gordon S.V., Hewinson R.G.;
"The complete genome sequence Mycobacterium bovis.";
Proc. Natl. Acad. Sci. U.S.A. 100:7877-7882(2003).

EMBL; BX248345; CAD95250.1; -; Genomic DNA.
GO; GO:0005950; P:response to stress; IEA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Complete proteome; Hypothetical protein.
SEQUENCE 268 AA; 28008 MW; EE2CB4F9C9D602AE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPRO06015; Usp.
InterPro; IPRO06016; UspA.
Pfam; PF00582; Usp; 1.
PRINTS; PR01438; UNVRSISTRESS.
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                                                                                                                                                                                                                                                                                                                           GSALCPVAVIHPSPAEPATTSQVSAVVAEV----DNGVVLRHAFEBARLRGVPLRAVA--
                                                                                                                                                                                                                                                                                                                                                         EKAHCPVAVMRSKVDQPA--SDINWIVVRMTDAPDNEAVLEYAAREAKLRQAPILALGGR 187
                                                                                                                                                                                                                                                                                                                                                                                         ASRKVEATGQPVKIETEVLCGRPLTKLMQESRSAAMLCVGSVGLD-HVRGRRGSVAATLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                         RAVVVGIDGSRAATHAALWAVDEAVNRDIPLRLVYVIDPSQLSAAGEGGGQSAARAALHD
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Pred. No. 2.4e-19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches 110;
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Best Local
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NUCLEOTIDE SEQUENCE.
STRAIN=CDC 1551 / Oshkosh;
MEDLINE=22206494; PubMed=12218036;
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Corynebacterineae;
Mycobacterium tube:
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Fleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O., Peterson J.D., DeBoy R.T., Dodson R.J., Gwinn M.L., Haft D.H., Hickey E.K., Kolonay J.F., Nelson W.C., Umayam L.A., Ermolaeva M. Salzberg S.L., Delcher A., Utterback T.R., Weldman J.F., Khouri H. Gill J., Mikula A., Bishai W., Jacobs W.R. Jr., Venter J.C., Fraser C.M.;
                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF00582; Usp; 1.
PRINTS; PR01438; UNVRSLSTRESS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Whole-genome comparison of laboratory strains.";
                                                                                                                                                                                                                                                                                                                                                                                                                                        interPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    erculist; Rv3134c; -. GO:0006950; P:response
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 240
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AE000516; AAX47558.1; -; Genomic_DNA.
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                             AVIGGGEAGQLARLVGPSGHPVFRHAECSVLVVR
                                                                                                                         GSALCPVAVIHPSPAEPATTSQVSAVVAEV----DNGVVLRHAFEEARLRGVPLRAVA--
                                                                                                                                                      EKAHCPVAVMRSKVDQPA--SDINWIVVRMTDAPDNEAVLEYAAREAKLRQAPILALGGR
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 FVADSHSAHELCGAYQPG-
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Pred. No. 2.4e-19;
5; Mismatches 110;
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CAVLTVR
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                              271
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Khouri H.M.,
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RESULT 7 Q73V37\_MYCPA

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Best Local
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,45 MYCBO
Q7TZ45 MYCBO I
Q7TZ45;
STRAIN=AF2122/97;
STRAIN=AF2122/97;
BYTHAIN=AF2102/97;
PubMed=12788972; DOI=10.1073/pnas.1130426100;
Garnier T., Eiglmeier K., Camus J.-C., Medina N., Mansoor H.,
Garnier T., buthoy S., Grondin S., Lacroix C., Monempe C., Simon
Pryor M., buthoy S., Grondin S., Lacroix C., Monempe C., Simon
Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler
Parkhill J., Barrell B.G., Cole S.T., Gordon S.V., Hewinson R.G
"The complete genome sequence of Mycobacterium bovis.";
Proc. Natl. Acad. Sci. U.S.A. 100:7877-7882(2003).
                                                                                                                                                                                                                                                                                                                                                                                                            01-OCT-2003 (TrEMBLrel. 25, Created)
01-OCT-2003 (TrEMBLrel. 25, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last annotation updat
Hypothetical protein Mb2051c.
OrderedLocusNames=Mb2051c;
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SEQUENCE
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Pfam; PF00582; Usp; 1.
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium;
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OrderedLocusNames=MAP3179c;
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05-JUL-2004 (TrEMBLrel.
05-JUL-2004 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                 Bacteria, Actinobacteria, Actinobacteridae, Actinomycetales, Corynebacterineae, Mycobacteriaceae, Mycobacterium,
                                                                                                                                                                                                                                                                                                                                                                                         Mycobacterium bovis.
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Q73V37;
                                                                                                                                                                                                                                   NUCLEOTIDE SEQUENCE.
                                                                                                                                                                                                                                                                                                              Mycobacterium tuberculosis
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Pred. No. 3.
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NUCLEOTIDE SEQUENCE.
STRAIN=CDC 1551 / Oshkosh;
MEDLINE=22206494; PubMed=12218036;
MEDLINE=22206494; PubMed=12218036;
DOI=10.1128/JB.184.19.5479-5490.2002;
Fleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O.,
Feterson J.D., DeBoy R.T., Dodson R.J., Gwinn M.L., Hatt D.H.,
Hickey E.K., Kolonay J.F., Nelson W.C., Umayam L.A., Ermolaeva M.D.,
Salzberg S.L., Delcher A., Utterback T.R., Weidman J.F., Khouri H.M.
Salzberg S.L., Delcher A., Bishai W., Jacobs W.R. Jr., Venter J.C.,
                                                                                                                                                                                                         Cole S.T., Brosch R., Parkhill J., Garnier T., Churcher C.M., Harris D.E., Gordon S.V., Eiglmeier K., Gas S., Barry C.E. III, Tekaia P., Badcock K., Basham D., Brown D., Chillingworth T., Connor R., Davies R.M., Devlin K., Feltwell T., Gentles S., Hamlin Holroyd S., Hornsby T., Jagels K., Krogh A., McLean J., Moule S., Murphy L.D., Oliver S., Osborne J., Quail M.A., Rajandream M.A., Rogers J., Rutter S., Seeger K., Skelton S., Squares S., Squares R. Sulston J.E., Taylor K., Whitehead S., Barrell B.G.; "Deciphering the biology of Mycobacterium tuberculosis from the
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mycobacterium tuberculosis.

Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium;
Mycobacterium tuberculosis complex.
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053472; Q7D7I
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01-JUN-1998 (TrEMBLrel. 06, Created)
01-JUN-1998 (TrEMBLrel. 06, Last sequence update)
13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
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Pfam; PF00582; Usp; 2.
PRINTS; PR01438; UNVRSLSTRESS.
Complete proteome; Hypothetical protein.
SEQUENCE 294 AA; 31456 MW; F06277821
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D:0006950; P:response to stress; TEA.
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Pred. No. 9.3
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EMBL; AE000516; AAK46364.1;
PIR; A70942; A70942.
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e proteome; Hypothetical
E 294 AA; 31456 MW; E
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                                                                                                                     ARWLLEHSEQAQLVVVGSHGRGGFSGMLLGSVSSAVAHSVRIPVIVVR
                                                                                                                                                                            ARFLADHDERVQLAVIGG-GEAGQLARLVGPSGHPVFRHAECSVLVVR
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Pred. No. 9.3e-15;
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RRAPARA RANKER RRANKARA RANKARA                                                                                 Cole S.T., Brosch R., Parkhill J., Garnier T., Churcher C.M., Harris D.E., Gordon S.V., Eiglmeier K., Gas S., Barry C.E. III, Tekaia F., Badcock K., Basham D., Brown D., Chillingworth T., Connor R., Davies R.M., Devlin K., Feltwell T., Gentles S., Hamlin Holroyd S., Hornbby T., Jagels K., Krogh A., McLean J., Woule S., Murphy L.D., Oliver S., Osborne J., Quail M.A., Rajandream M.A., Rogers J., Rutter S., Seeger K., Skelton S., Squares S., Squares R. Sulston J.E., Taylor K., Whitehead S., Barrell B.G.; "Deciphering the biology of Mycobacterium tuberculosis from the complete genome sequence."; Nature 393:537-544(1998).
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P6492T; Q10851;
01-0CT-1996 (Rel. 34, Created)
25-0CT-2004 (Rel. 45, Last sequence update)
10-MAY-2005 (Rel. 47, Last annotation update)
Hypothetical protein Rv2005c/MT2061.
OrderedLocusNames=Rv2005c, MT2061; ORFNames=MTCY39.12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacteria; Actinobacteria; Actinobacteridae; Corynebacterineae; Mycobacteriaceae; Mycobac Mycobacterium tuberculosis complex.
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NUCLEOTIDE
SEQUENCE
[LARGE
SCALE GENOMIC DNA]
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Q1-QCT-1996 (Rel. 34, Created)
Q1-QCT-1996 (Rel. 34, Last sequence update)
Q1-QCT-1996 (Rel. 34, Last sequence update)
10-MAY-2005 (Rel. 47, Last annotation update)
Hypothetical protein Mb2028c;
OrderedLocusNames=Mb2028c;
Mycobacterium bovis.
Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterinese; Mycobacteriaceae; Mycobacterium;
Mycobacterium tuberculosis complex.
NCBI TaxID=1765;
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Fleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O.,
Peterson J.D., DeBoy R.T., Dodson R.J., Gwinn M.L., Haft D.H.,
Hickey E.K., Kolonay J.F., Nelson W.C., Umayyam L.A., Ermolaeva M.D.,
Salzberg S.L., Delcher A., Utterback T.R., Weidman J.F., Khouri H.M.
Gill J., Mikula A., Bishai W., Jacobs W.R. Jr., Venter J.C.,
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EMBL;
PIR; (
        NUCLEOTIDE
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InterPro; IPR006016; UspA.
Pfam; PF00582; Usp; 2.
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J. Bacteriol. 184:5479-5490(2002).
-!- SIMILARITY: To B.subtilis yxiE.
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MEDLINE=22206494; PubMed=12218036;
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     SEQUENCE
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     [LARGE SCALE GENOMIC DNA]
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29.6%;
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Pred. No. 8.6e
48; Mismatches
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                                                                                                                                                                   STRAIN=YS-314 / AJ 12310 / DSM 44549 / JCM 11189;
MEDLINE=22723752; PubMed=12840036; DOI=10.1101/gr.1285603;
Nishio Y., Nakamura Y., Kawarabayasi Y., Usuda Y., Kimura
Sugimoto S., Matsui K., Yamagishi A., Kikuchi H., Ikeo K.,
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Gojobori T.,
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SEQUENCE
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GO; GO.0006950; P:response to stress; IEA.
InterPro; IPR006015; Usp.
InterPro; IPR006016; UspA.
Pfam; PF00582; Usp; 2.
PRINTS; PR01438; UNVRSLSTRESS.
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InterPro; IPRO06016; UspA.
Pfam; PF00582; Usp; 2.
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Bacteria; Actinobacteria; Actinobacteridae;
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OrderedLocusNames=MAP1742c;
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EPTMKTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPT---
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                                                                                                                                 293 AA;
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                                                                                                                                 30567 MW;
                                                                         19.8%; Score 276.5; DB 2; 27.9%; Pred. No. 4.6e-13;
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28.4%; Pred. No. 4.2
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-; Genomic_DNA.
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Last sequence update)
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                                                          Mismatches 119;
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SEQUENCE
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05-JUL-2004 (TrEMBLrel. 27,
05-JUL-2004 (TrEMBLrel. 27,
05-JUL-2004 (TrEMBLrel. 27,
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OrderedLocusNames=MAP1741c;
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294 AA;
 GIARFLADHDERVQLAVIGG-GEAGQLARLVGPSGHPVFRHAECSVLVVR
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                                                           SRRGVDLNAVHAWSDTQVFGLPGIDWPAVRSEAERSLAERLAGWQERYPDVTVHRMVVCD
                                                                                                                                                                    YASSILGSTATELAEKAHCPVAVMRSKVD-QPASDINWIVVRMTDAPDNEAVLEYAAREA
                                                                                                                                                                                                           ----GRRVLQEAVKIAEDATRNGRKLAITTELWHAPPAPTLAQLSEEAELVVVGSTGRGA
                                                                                                                                                                                                                                             DLAHAERSLREAQSAVEAA---GKLVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGR 115
                                                                                                                                                                                                                                                                                    VLVGVDGSPASNFAVCWAARDAAMRNVPLTLVHMVNAATVWPQVPMAAEAVAWQEDD----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAPVIVVR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VAGSQGLGALGRILLIGSVTAALLAHAHCPVAVVHADDHAARAADAP-----VLVGTDGS
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                                                                                              KLRQAPILALG---
                                                                                                                                 IGRLLLGSVSSGLVRRARCPVÄVIHDEDPMMPYPQRAPVLVGIDGSPASELATAIÄFDEÄ
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Last annotation update)
                                                                                            -GRP----EELREIPDGEFERRVQDWHHRHPDVRVYPITTHT
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Pred. No. 1.1e-12;
0; Mismatches 129;
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292

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XX MEDLINE-22709107; PubMed=12788972; DOI=10.1073/pnas.1130426100;
XX MEDLINE-22709107; PubMed=12788972; DOI=10.1073/pnas.1130426100;
XX MEDLINE-22709107; PubMed=12788972; DOI=10.1073/pnas.1130426100;
XX MEDLINE-22709107; PubMed=127 K., Camus J.-C., Medina N., Mansoor H.,
XX Marris B., Eiglmeier K., Camus J.-C., Monsempe C., Simon S.,
XX Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler P.R.,
XX Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler P.R.,
XX Parkhill J., Barrell B.G., Cole S.T., Gordon S.V., Hewinson R.G.;
XX "The complete genome sequence of Mycobacterium bovis.";
XX Proc. Natl. Acad. Sci. U.S.A. 100:7877-7882(2003).
XX Proc. Natl. Acad. Sci. U.S.A. 100:7877-7882(2003).
XX Proc. Natl. Acad. Sci. U.S.A. 100:7877-7882(2003).
XX Proc. Natl. Acad. Sci. U.S.A. 100:7877-7882(2003).
XX Interpro; IPR006015; Usp.
XX Interpro; IPR006015; UspA.
XX Interpro; IPR006015; UspA.
XX Interpro; IPR006015; UspA.
XX Interpro; PR01438; UNVRSLSTRESS.
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Best Local Similarity
Matches 84; Conserv
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75 MYCBO
75 MYCBO
PRELIMINARY;
PRT;
297 AA.
QTTY75
QTTY75;
01-OCT-2003 (TrEMBLrel. 25, Created)
01-OCT-2003 (TrEMBLrel. 25, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
Hypothetical protein TB31.7.
Name=TB31.7; CrearedLocusNames=Mb2656;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mycobacterium tuberculosis complex.
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Corynebacterineae; Mycobacteriaceae; Mycobacterium;
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Simon S.,
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Result
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Maximum Match 100%
Listing first 45 summaries
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length: 2000000000
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2: /cgn2 6/ptodata/1
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4: /cgn2 6/ptodata/1
5: /cgn2 6/ptodata/1
6: /cgn2 6/ptodata/1
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|   | 6.3                  | 6. <sub>3</sub> | 6.3             |                 |                 |          |          |          |          |                 |                     |                  |                      |                      | •                   |          | ٠                    | •      |
|   | 547                  | 403             | 1421            | 1421            | 1421            | 1421     | 1421     | 1421     | 1421     | 1421            | 512                 | 1953             | 1388                 | 684                  | 615                 | 585      | 484                  | 2 / 0  |
| US-09-252-991A-2696 US-09-252-991A-30045 US-09-252-991A-27004 US-09-252-991A-20237 US-09-252-991A-20237 US-09-902-540-15789 US-09-902-540-15789 US-09-902-540-15789 US-09-902-540-15789 US-09-568-409-2 US-09-568-480-2 US-09-568-486-2 | N                    | N               | N               | N               | N               | N        | N        | N        | N        | N               | N                   | N                | N                    | N                    | N                   | N        | N                    | Þ      |
|   | US-09-252-991A-18576 | -489            | US-10-014-717-2 | US-09-567-899-2 | US-09-568-472-2 | -09      | -09      | -09      | 9-19     | US-09-335-409-2 | US-09-902-540-15789 | US-09-917-254-92 | US-09-252-991A-20237 | US-09-252-991A-27004 | US-09-949-016-11320 | -09      | US-09-252-991A-26896 |        |
|   | 18576, 1             | 11881, A        | 2, Appli        | 2, Appli        | 2, Appli        | 2, Appli | 2, Appli | 2, Appli | 2, Appli | 2, Appli        | 15789, A            | 92, Appl         | 20237, 1             | 27004, 7             | 11320, 7            | 30045, A | 26896, A             | OFCOO! |

### ALIGNMENTS

APPLICANT: Kroger, Burkhard

APPLICANT: Kroger, Burkhard

APPLICANT: Schoroder, Hartwig

APPLICANT: Schoroder, Hartwig

APPLICANT: Schoroder, Gregor

TITLE OF INVENTION: CORYNEBACTBRIUM GLUTAMICUM GENES ENCODING NOVEL

TITLE OF INVENTION: PROTEINS

FILE REFERENCE: BGI-129CP

CURRENT APPLICATION NUMBER: US/09/605,703B

CURRENT FILING DATE: 2000-06-27

PRIOR APPLICATION NUMBER: 60/142,764

PRIOR APPLICATION NUMBER: 60/142,764

PRIOR APPLICATION NUMBER: 60/152,318

PRIOR FILING DATE: 1999-09-03

NUMBER OF SEQ ID NOS: 2934

SEQ ID NO 1870

LENGTH: 301 Ś 밁 δ 밁 Ş 밁 S 밁 ð ; TYPE: PRT ; ORGANISM: Corynebacterium glutamicum US-09-605-703B-1870 RESULT 1 US-09-605-703B-1870 Sequence 1870, Application Patent No. 6962989 GENERAL INFORMATION: Matches Query Match Best Local 180 240 176 121 118 SSILGSTATELAEKAHCPVAVMR--SKVDQPASDINWIVVRMTDAPDNEAVLEYAAREAK 175 61 59 DL-AHAERSLREAQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGRYA 117 85; ω œ Similarity GMVMGSVSGAVVSHAKCPVVVVVREDSAVNED-SKYGPVVVGVDGSEVSQQATEYAFAEAE DLQAEALEKINEARDIAHEVAPEIKIGHTIAEGSPIDMLLEMSPDATMIVMGSRGLGGLS I I TRDR PVRALAEAS ENAQULIVVGSHGRGGFKGMLLGSTSRALLQSAPCPMMVVR LR-----TEDIVVVAVDGSDASKQAVRWAANTANKRGIPLRLAS--SYTMPQFLYAEGMVPPQELFD 60 TMKTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTHPS-----PDDYDR ARGAELVAVHTWMDMQVQASLAGLAAAQQQWDEVERQQTDMLIERLAPLVEKYPSVTVKK TTHTGIARFLADHDERVQLAVIGG-GEAGQLARLVGPSGHPVFRHAECSVLVVR Conservative 19.0%; US/09605703B QAPILALGGRPEELREIPDGEFE---RRVQDWHHRHPDVRVYP 217 45; Score 266; DB 2; I Pred. No. 7.7e-21; 5; Mismatches 131; Length 301; Indels 34; Gaps 294 179 120 58

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CURRENT APPLICATION NUMBER: US/09/758,759
CURRENT FILING DATE: 2001-01-11
PRIOR APPLICATION NUMBER: US 60/175,751
PRIOR FILING DATE: 2000-01-12
NUMBER OF SEQ ID NOS: 204
SOPTWARE: Patentin Ver. 2.1
SEQ ID NO 151
LENGTH: 613
TYPE: PRT
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; OTHER INFORMATION: evcE
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LENGTH: 189
TYPE: PRT
ORGANISM: Staphylococcus epidermidis
US-09-134-001C-3795
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US-09-134-001C-3795
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Best Local Similarity
Matches 74; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 151, Application US/09758759 Patent No. 6861513
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Best Local (
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APPLICANT: Horan, Ann C.
TITLE OF INVENTION: Everninomicin Biosynthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: US 60/064,964
PRIOR FILING DATE: 1997-11-08
PRIOR APPLICATION NUMBER: US 60/055,779
PRIOR FILING DATE: 1997-08-14
NUMBER OF SEQ ID NOS: 5674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Hosted, Thoma APPLICANT: Wang, Tim X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Lynn Doucette-Stamm et al TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO STAPHYLOCOCCUS TITLE OF INVENTION: EPIDERMIDIS FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION NUMBER: US/09/134,001C CURRENT FILING DATE: 1998-08-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILE REFERENCE: GTC-007
                                                                                                                                                                                                                                                                                  ORGANISM: Micromonospora carbonacea
                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               144 RFIVGSVSEAIVRHAPCDVLVVRTE 168
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                                                    PAAGVLALGLLVAGVALPLAATALTRHAADRVAPLRGALATDAVDLVHGAADLAAFGATG 240
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                                                                                            PTMKTIIVGIDGSHAAITAALWGVD-EAISRAVPLR---LVSVIKPTHPSPD------
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      -----DYDRDLAHAERSLREAQSAVBAAGKLVKIETDIPRGPAGPVLVEASRDAEMIC 107
                                                                                                                                          Conservative
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                                                                                                                                       7.6%; Score 105.5; DB 2; 27.0%; Pred. No. 0.015; rative 22; Mismatches 99;
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NAME/KEY: misc feature;
LOCATION: (B) LOCATION 1...151
SEQUENCE DESCRIPTION: SEQ ID NO: 5606:
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Sequence 5606, Application.
Patent No. 6583275
Patent No. 6583275
Patent No. 1000 ACID SEQUENCES RELATING TO TITLE OF INVENTION: NUCLETC ACID AND AMINO ACID SEQUENCES RELATING TO ENTEROCOCCUS FABGIUM FOR DIAGNOSTICS AND THERAPEUT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 4
                                                                 Matches
                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: (781)893-8277 INFORMATION FOR SEQ ID NO: 5606:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/107,532A

FILING DATE: 30-7un-1998

PRIOR APPLICATION DATA:

APPLICATION NUMBER: 60/085,598

FILING DATE: 14 May 1998

APPLICATION NUMBER: 60/051571

FILING DATE: July 2, 1997
                                                                                                                                                                                                                                                                       HYPOTHETICAL: YES ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: Ariniello, Pamela Deneke
REGISTRATION NUMBER: 40,489
REFERENCE/DOCKET NUMBER: GTC-012
TELECOMMUNICATION INFORMATION:
TELEPHONE: (781)893-5007
                                                                                                                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                           MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 151 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: CD/ROM ISO9660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
ADDRESSEE: GENOME THERAPEUTICS CORPORATION
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  223 GIARFLADHDERVQLAVIGGGEAGQLARLVGPSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               344 ATPPGAARAA-----AVGAGPH-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10 KTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTHPSPDDYDRDLAHAERSLRE : |: | : | : | : | : | : | : | : |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VGSVGIGRYASSILGSTATELAEKAHCPVAVMRSKVDQPASDINWIVVRMTDAPDNEAVL 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITY: Waltham
STATE: Massachusetts
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EY---AAREAKLRQAPILALGGRPEELREIPDGEFERRVQDWHHRHPDVRVYPITT--HT 222
                                                                                                                                                                                                                                                                                                                                                       TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OPERATING SYSTEM: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: PC
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                                                                                                                                                                                                                                                    ORGANISM: Enterococcus faecium
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                                                                 Conservative
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                                                               7.5%; Score 105; DB 2; 23.6%; Pred. No. 0.0019; tive 28; Mismatches 6
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                                                                   69;
                                                                                                       Length 151
                                                                 Indels 10; Gaps
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APPLICANT: Goldman, Barry S.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
ITILE OF INVENTION: Myxococcus xanthus Genome Section of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment of the Comment o
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US-09-328-352-5749
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US-09-902-540-12843
GENERAL INFORMATION:
APPLICANT: Gary L. Breton et al.
APPLICANT: Gary L. Breton et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO ACINETOBACTER
TITLE OF INVENTION: BAUMANNII FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: GTC99-03PA
CURRENT APPLICATION NUMBER: US/09/328,352
CURRENT FILING DATE: 1999-06-04
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                                                                                                                                                                                                                    Sequence 5749, Application US/09328352
Patent No. 6562958
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Best Local :
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ORGANISM: Myxococcus xanthus
-09-902-540-12843
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10. 6833447
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                                                                                                                                                                                                                                                                                                                                                                                                            GRLWSVSRH-ALRLARMSVVCV 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ARLVGPSGHPVFRHAECSVLVV 270
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CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 27590
LENGTH: 542
TYPE: PRI
ORGANISM: Pseudomonas aeruginosa
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; SEQ ID NO 5749
; LENGTH: 1028
; TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 27590, Application US/09252991A
Patent No. 6551795
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Matches 5
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TITLE OF INVENTION: NUCLEIC ACID AMD AMINO ACID SEQUENCES RELATING
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Acinetobacter baumannii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Match 7.1%; Score 98.5; DB 2; Local Similarity 19.4%; Pred. No. 0.073;
                                                                          183
                                                                                                                                                                                                                                                                                                                     105
                  395
                                                                                                                                                                                                                                                                                                                                                                                218 A---RRVLELISGLNESDRVIFLLSGGGSALLSLPAEGIGLADKQAVNKALLKSGAAIGE 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                158 RAÍVIGAGKAAGAMÁEVVEKHWQGEIQGLVVAPYRYGAQCSRIEVVEASHPVPDDAGERV 217
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22 AITAALWGVDEAISRAVPLRLVSVIKPTHPSPDDYDRDLAHAERSLREAQSAVEAAGKLV
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                                                                                                                                   RRYAIDVPONVLDWLADPRSETVKPDDPCLARSHFQLIATPONALDAAAVKCRAAGFSTL 394
                                                                                                                                                                                                                                                            MNCVRKHLSAIKGGRLAKACWPASVFTYAISDVPGDEÄTVIÄSGPSVGDPTTSADALAIL 334
                                                                                                                                                                                                                                                                                                                                                                                                                                        AHAERSLREAQSAVEAAGKLVKIET------DIPRGPAG------PVLVEASRDAE 104
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                  ILGDLEGEAREV--
                                                                       ALGGRPEELREIPDGEFERRVQDWHHRHPDVRVYPITTHTGIARFLADHDE--RVQLAVI 240
                                                                                                                                                                                              MRSKVDQPASDINWIVVRMTDA--PDN------EAVLEYAAREAKLRQAPIL 182
                                                                                                                                                                                                                                                                                                           MICV----GSVGIGRYA-----
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Pred. No. 0.12;
3; Mismatches
                                                                                                                                                                                                                                                                                                                        SSILGSTATELAE-----KAHCPVAV 138
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               -AKVHAGIARQIRKHGQPLAAPCVIL 431
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RESULT 9
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US-09-252-991A-30569
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                                                   ; APPLICANT: Gary Breton et. al
; TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA
; TITLE OF INVENTION: PNEUMONIAE FOR DIAGNOSTICS AND THERAPEUTICS
; FILE REFERENCE: 2709.2004001
; CURRENT APPLICATION NUMBER: US/09/489,039A
; CURRENT FILING DATE: 2000-01-27
PRIOR APPLICATION NUMBER: US/09/489,039A
; CURRENT FILING DATE: 1999-01-29
PRIOR FILING DATE: 1999-01-29
NUMBER OF SEQ ID NOS: 14342
SEQ ID NO 10221
LENGTH: 657
TYPE: PRT
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APPLICANT: Gary Br
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LENGTH: 735
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TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR APPLICATION NUMBER: US 60/074,790
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
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APPLICANT: Marc J.
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ORGANISM: Pseudomonas aeruginosa
-09-252-991A-30569
                              ORGANISM: Klebsiella pneumoniae
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US-09-902-540-12939
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Patent No. 6833447
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
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APPLICANT: Goldman, Barry S.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and Uses Thereof
FILE REFERENCE: 38-10(15849) B
CURRENT APPLICATION NUMBER: US/09/902,540
CURRENT FILING DATE: 2001-07-10
PRIOR APPLICATION NUMBER: 60/217,883
PRIOR FILING DATE: 2000-07-10
NUMBER OF SEQ ID NOS: 16825
SEQ ID NO 12939
LENGTH: 715
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 12939, Application US/09902540
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Match 7.0%;
Local Similarity 22.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                3 GRGEPTMKTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTHPSPDDYDRDLAH
ARFLADHDERVQLAVIG-GGEAGQLARLVGPSGHPVFRHAECSVLVV
                                                                                                                                                                                  LFSQTMLGGTVREVMQEASGPVAVL---VDRGLSDIXRVLVPFAGSRHDRAALALARRLR
                                                                                                                                                                                                                                     RYASSILGSTATELAEKAHCPVAVMRSKVDQPASDINWIVVRMTDAPDNEAVLEYAAREA 174
                                                                           QQADAEVTVLHVTSDLGGNGGARAQVEALFPANEGGVTLKEVRSDAPD----
                                                                                                                                                                                                                                                                                                                                         AERSLREAQSAV-----EAAGKLVKIETDIPRGPAGPVLVEA-SRDAEMICVGSVGIG 114
                                                                                                                                                                                                                                                                                                                                                                                               GQAGPGMATLARSLSGR----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LAVIGGEAGQLARLV 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EHTGELRVVASGEGRVNNHQFYLSRRDYLAQHGDIMRRLLTELTHTG--QFIDSH-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GRPEELREIPDGE-----FERRVQDWHHRHPDV--RVYPITTHTGIARFLADHDERVQ 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ----PASDINWIV------VRMTDAPDNEAVL--EYAAREAKLRQAPILALG 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ASRDAEMICVGSVG-----IGRYASSILGSTATE-LAEKAHCPVAVMRSKVDQ-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GEPTMKTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVS-----VIKPTH--
                                                                                                                                 KLRQAPILAL-----
                                                                                                                                                                                                                                                                                        AQQRAPÉEDSALMPLLWRAVSLGLSVRPLSFVSAEPAQDICRTAKARRADLVLLG-WHKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RIALNKGSNVHWLLLQILEDAGLGLNDVRVVYTPPKYPLTASDYLAVDAWMWDPLLSDA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   45; Mismatches 122;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 97.5; DB Pred. No. 0.15;
                                                                                                                              GGRPEELREIPDGEFERRVQDWHHRHPDVRVYPITTHTGI
                                                                                                                                                                                                                                                                                                                                                                                            ---EEGAQLHALHLVSPERAS-----LRP
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                                270
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LOCATION: (B) LOCATION 1...148

SEQUENCE DESCRIPTION: SEQ ID NO: 3293:
US-09-107-433-3293
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US-09-107-433-3293
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RESULT 12
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Patent No. 6800744
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INFORMATION FOR SEQ ID NO: 3293:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/107,433
FILING DATE: 30-Jun-1998
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 60/ 085131
FILING DATE: May 12, 1998
APPLICATION NUMBER: 60/05153
FILING DATE: July 2, 1997
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                             PEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE: protein HYPOTHETICAL: YES ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Ariniello, Pamela Deneke REGISTRATION NUMBER: 40,489 REFERENCE/DOCKET NUMBER: GTC-011 TELECOMMUNICATION IMFORMATION: TELEPHONE: (781)893-5007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Lynn A Doucette-Stamm and David Bush
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID
SEQUENCES RELATING TO STREPTOCOCCUS PNEUMONIAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
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                                                      123
                                                                                          121 LGSTATELAEKAHCPVAVMRSK 142
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                                                                                                                                                                                                                                               10 KTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKP-THPSPDDYDRDL-----AHA 63
                                                                                                                                                                                                                                                                                        36;
                                                                                                                                                                                                           4 QNIMVAIDGSKEADLAFVKGVHSALRNDAKLTIAHVIDTRALQSVSTFDAEVYEELQVDA 63
                                                                                                                                ESLMKEYEKRAKDAG-VADVHIVIEMGNPKTLLARTIPDAEEVDLILVGATGLNAFERLL 122
                                                                                                                                                                     ERSLREAQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAE---MICVGSVGIGRYASSI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: <Unknown>
OPERATING SYSTEM: <Unknown>
                                                      VGSSSEYILRHAKVDLLVVREQ 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Streptococcus pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: (781)893-8277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDIUM TYPE: CD/ROM ISO9660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STATE: Massachusetts
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCE CHARACTERISTICS:
LENGTH: 148 amino acids
                                                                                                                                                                                                                                                                                        Conservative
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                                                                                                                                                                                                                                                                                    6.9%; Score 97; DB 2;
25.4%; Pred. No. 0.014;
tive 27; Mismatches
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                                                                                                                                                                                                                                                                                                                          DB 2; Length 148;
                                                                                                                                                                                                                                                                                        69;
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US-09-107-532A-3842
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Best Local
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PRIOR APPLICATION. 1998-05-12
PRIOR FILING DATE: 1998-05-12
PRIOR APPLICATION NUMBER: US 60/051,553
PRIOR FILING DATE: 1997-07-02
PRIOR FILING DATE: 1997-07-02
NUMBER OF SEQ ID NOS: 5322
SEQ ID NO 3588
LENGTH: 150
THE SET THE SECOND DATE: 1997-07-01000011ae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; ORGANISM: Streptococcus pneumoniae US-09-583-110-3588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-583-110-3588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 3842, Application US/09107532A
PATENT NO. 6583275
PATENT INFORMATION:
APPLICANT: Lynn A Doucette-Stamm
TITLE OF INVENTION: NUCLEIC ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 3588, Application US/09583110 Patent No. 6699703
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CURRENT APPLICATION NUMBER: US/09/583,110
CURRENT FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: US 09/107,433
PRIOR FILING DATE: 1998-06-30
PRIOR FILING DATE: 1998-06-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Lynn Doucette-Stamm et al.

TITLE OF INVENTION: Nucleic Acid and Amino Acid Sequences Relating to Streptococcus
TITLE OF INVENTION: Pneumoniae for Diagnostics and Therapeutics
                   CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/107,532A
APPLICATION NUMBER: US/09/107,532A
APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: 60/085,598
FILING DATE: 14 May 1998
APPLICATION NUMBER: 60/051571
FILING DATE: July 2, 1997
ATTORNEY/AGENT INFORMATION:
NAME: Ariniello, Pamela Deneke
REGISTRATION NUMBER: 40,489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                        ZIP: 02354
COMPUTER READABLE FORM:
MEDIUM TYPE: CD/ROM ISO9660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES: 7310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 LGSTATELAEKAHCPVAVMRSK 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10 KTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKP-THPSPDDYDRDL----AHA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QNIMVAIDGSKEADLAFVKGVHSALRNDAKLTIAHVIDTRALQSVSTFDAEVYEELQVDA 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STATE: Massachusetts COUNTRY: USA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ESLMKEYEKRAKDAG-VADVHIVIEMGNPKTLLARTIPDAEEVDLILVGATGLNAFERLL 124
                                                                                                                                                                                                                                                                                                               OPERATING SYSTEM: <Unknown>
SOFTWARE: ASCII
                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CITY: Waltham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET: 100 Beaver Street
REFERENCE/DOCKET NUMBER: GTC-012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE: GENOME THERAPEUTICS CORPORATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
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AND AMINO ACID SEQUENCES RELATING TO
FAECIUM FOR DIAGNOSTICS AND THERAPEUTICS
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PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR FILING DATE: 1998-07-27
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 30428
LENGTH: 420
TYPE: PRT
ORGANISM: Pseudomonas aeruginosa
US-09-252-991A-30428
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US-09-252-991A-30428
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Matches
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Patent No. 6551795
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/09/252,991A CURRENT FILING DATE: 1999-02-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILE REFERENCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO: 3842:
                                                                                                                                                                                                                                                                           Local Similarity
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                                       162 DNEAVLEYAAREAKLRQAPILALGGRP-----EELREIPDGEFERRVQDWHHRHPDV 213
                                                                                 268 HAVLVVVGVVGMGR-AEQVLDRRVV--
                                                                                                                           102 DAEMICVGSVGIGRYASSILGSTATELAEKAHCPVAVMRSKVDQPASDINWIVVRMTDAP 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     127
                                                                                                                                                                     216 PAPERNLDRPELAHVAAHL-DAQARQVFLG-----DSPGGHAHGGLARRGTAAAAVVA 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121 LGSTATELAEKAHCPVAVMRSKVDQ--PASD 149
                                                                                                                                                                                                             51 PSPD-DYDR-DLAHAERSLREAQSAVEAAGKLVKIETDIPRGPA-----GPVLVEASR 101
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10 KTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKP-THPSPDDYDRDLAH-----A 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            38; Conservative
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AGGLALEHPGK--NLHLVGFLALGGVPAGAGLAPVEVALQVPGGQFQPRGA------
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Application US/09252991A
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                                                                                   -LGLLVGVADQQA-----
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Search completed: March 23, 2006, 05:30:16 Job time: 19.6513 secs
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US-09-328-352-7302
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CURRENT APPLICATION NUMBER: US/09/328,352
CURRENT FILING DATE: 1999-06-04
NUMBER OF SEQ ID NOS: 8252
SEQ ID NO 7302
LENGTH: 157
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 7302, Application US/09328352
Patent No. 6562958
GENERAL INFORMATION:
APPLICANT: Gary L. Breton et al.
APPLICANT: Gary L. Breton et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TITLE OF INVENTION: BAUMANNII FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                               Matches
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                                                                                                                               118 SSILGSTATELAEKAHCPVAVM 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       214 RVYPITTHTGIARFLADHDERVQLAVIGGGEAGQLARLVGPSGHPVFR 261
                                                                                                                                                                         76
                                                                                                                                                                                                                 61 AHAERSIREAQSAVEAAGKIVKIETDIPRGPA-GPVLVEASRD--AEMICVGSVGIGRYA 117
                                                                                                                                                                                                                                                              16 ILVPVDGSPTSLIAVNHAASLAKAFSSKVTLVYALTIDPFISVEIIDSTEIAQDYFNKAR
                                                                                                                                                                                                                                                                                                      12 IIVGIDGS-----HAAITAALWGVDEAISRAV---PLRLVSVIKPTHPSPDDYDRDL
                                                                                                                                                                                                                                                                                                                                               36;
                                                                                                                                                                                                                                                                                                                                                                   h 6.7%; Score 94; DB 2; Length 157; Similarity 25.4%; Pred. No. 0.033;
                                                                                    KFFLGSVTQALLGEIHVPVLVV
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                                                                                                                                                                                                                                                                                                                                               Conservative
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Total number of hits satisfying chosen parameters:
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1397
1 MSGRGEPTMKTIIV
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1: /cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*

2: /cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*

3: /cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*

4: /cgn2_6/ptodata/1/pubpaa/US10A_PUBCOMB.pep:*

5: /cgn2_6/ptodata/1/pubpaa/US10B_PUBCOMB.pep:*

6: /cgn2_6/ptodata/1/pubpaa/US11_PUBCOMB.pep:*
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Gapop 10.0 , Gapext 0.5
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                                                                                                 GenCore version 5.1.7
(c) 1993 - 2006 Biocceleration
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                           US-10-617-038-27
US-10-617-038-27
US-10-617-038-21
US-10-617-038-42
US-10-138-473-34
US-10-450-726-4
US-09-746-660A-6
US-09-746-660A-20
US-10-450-055-8
US-10-450-055-8
US-10-450-055-8
US-10-156-761-883-9
US-10-156-761-883-9
US-10-156-761-883-9
US-10-437-963-15343-9
US-10-426-1515-283083
US-10-427-701-40880
US-10-427-151-283083
US-10-427-151-283083
US-10-427-151-283083
US-10-427-963-126295
US-10-437-963-126295
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27, Appl
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64, Appl
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US-10-617-038-27
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Result

Score 1397

RESULT 2

| 45                   | 44                   | 43                   | 42                 | 41                   | 40                   | 39                   | 38                | 37                | 36                  | 35               | 34                   | J<br>J               | 32                  | 31                   | 30                 | 29                   | 28                   |
|----------------------|----------------------|----------------------|--------------------|----------------------|----------------------|----------------------|-------------------|-------------------|---------------------|------------------|----------------------|----------------------|---------------------|----------------------|--------------------|----------------------|----------------------|
| 102                  | 103                  | 103                  | 104.5              | 104.5                | 104.5                | 105                  | 105.5             | 105.5             | 107                 | 107.5            | 107.5                | 108                  | 108                 | 108                  | 108                | 109                  | 109                  |
| 7.3                  | 7.4                  | 7.4                  | 7.5                | 7.5                  | 7.5                  | 7.5                  | 7.6               | 7.6               | 7.7                 | 7.7              | 7.7                  | 7.7                  | 7.7                 | 7.7                  | 7.7                | 7.8                  | 7.8                  |
| 164                  | 182                  | 174                  | 194                | 147                  | 147                  | 165                  | 613               | 613               | 206                 | 6751             | 177                  | 256                  | 245                 | 183                  | 147                | 941                  | 941                  |
| 4.                   | 4                    | 4                    | 4                  | 4                    | 4                    | 4                    | σ                 | w                 | 4                   | Ų                | ٨                    | 4                    | 4                   | 4                    | ω                  | 4.                   | 4.                   |
| US-10-425-115-242323 | US-10-424-599-170465 | US-10-425-115-222011 | US-10-156-761-8452 | US-10-282-122A-63851 | US-10-282-122A-62210 | US-10-437-963-148540 | US-11-021-825-151 | US-09-758-759-151 | US-10-425-114-47029 | US-10-760-493-25 | US-10-424-599-170466 | US-10-425-115-305753 | US-10-425-114-62796 | US-10-437-963-108194 | US-09-738-626-5013 | US-10-282-122A-64612 | US-10-282-122A-62427 |
| Sequence 2           | Sequence 1           | Sequence 2           | Sequence 8         | Sequence 6           | Sequence 6           | Sequence 1           | Sequence 1        | Sequence 1        | Seguence 4          | Sequence 2       | Sequence 1           | Sequence 3           | Sequence 6          | Sequence 1           | Sequence 5         | Sequence 6           | Sequence 6           |
| 242323,              | 170465,              | 222011,              | 8452, Ap           | 63851, A             | 62210, A             | 148540,              | 51, App           | 151, App          | 47029, A            | 25, App1         | 170466,              | 305753,              | 62796, A            | 108194,              | 5013, Ap           | 64612, A             | 62427, A             |

## ALIGNMENTS

Minimum Maximum

DB seq

Post-processing:

Database :

Scoring table:

Title: Perfect score:

on:

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CURRENT APPLICATION NUMBER: US/10/617,038
CURRENT FILING DATE: 2003-07-11
PRIOR APPLICATION NUMBER: DK PA 2002 01098
PRIOR FILING DATE: 2002-07-13
PRIOR APPLICATION NUMBER: US 60/401,725
PRIOR FILING DATE: 2002-08-07
NUMBER OF SEQ ID NOS: 187
SOFTWARE: PATENTIN VERSION 3.2
SEQ ID NO 27
LENGTH: 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; TYPE: PRT ; ORGANISM: Mycobacterium tuberculosis US-10-617-038-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 27, Application US/10617038 Publication No. US20040057963A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 272; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Andersen, Peter
APPLICANT: Rosenkrands, Ida
APPLICANT: Stryhn, Anette
TITLE OF INVENTION: Therapeutic TB Vaccine
FILE REPERENCE: SSISAUSA
                                                                                                                                                                                        121 LGSTATELAEKAHCPVAVMRSKVDQPASDINWIVVRMTDAPDNEAVLEYAAREAKLRQAP 180
                                                                                                                                                                                                                                                                                                                                   1 MSGRGEPTMKTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTHPSPDDYDRDL
                                                                                                                                                                                                                                                                                                                                                        1 MSGRGEPTMKTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTHPSPDDYDRDL
                                                                                                                                                                                                                                              AHAERSLREAQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGRYASSI
                   GGGEAGQLARLVGPSGHPVFRHAECSVLVVRR
                                                                              LGSTATELAEKAHCPVAVMRSKVDQPASDINWIVVRMTDAPDNEAVLEYAAREAKLRQAP
GGGEAGQLARLVGPSGHPVFRHAECSVLVVRR
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; ORGANISM: Mycobacterium tuberculosis US-10-617-038-42
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; TYPE: PRT
; ORGANISM: Mycobacterium tuberculosis
US-10-617-038-21
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                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 42, Application US/10617038 Publication No. US20040057963A1 GENERAL INFORMATION:
Query Match
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Best Local :
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LENGTH: 279
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
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APPLICANT: Rosenkrands, Ida
APPLICANT: Stryhn, Anette
TITLE OF INVENTION: Therapeutic TB Vaccine
FILE REFERENCE: SSISAUSA
                                                                                                                                             NUMBER OF SEQ ID NOS: 187
SOFTWARE: PatentIn version 3.2
                                                                                                                                                                                       PRIOR APPLICATION NUMBER: DK PA 2002 01098
PRIOR FILING DATE: 2002-07-13
PRIOR APPLICATION NUMBER: US 60/401,725
PRIOR FILING DATE: 2002-08-07
                                                                                                                                                                                                                                                                         CURRENT APPLICATION NUMBER: US/10/617,038
CURRENT FILING DATE: 2003-07-11
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PRIOR FILING DATE: 2002-07-13
PRIOR APPLICATION NUMBER: US 60/401,725
PRIOR FILING DATE: 2002-08-07
NUMBER OF SEQ ID NOS: 187
SOPTWARE: Patentin version 3.2
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CURRENT APPLICATION NUMBER: US/10/617,038
CURRENT FILING DATE: 2003-07-11
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APPLICANT: Rosenkrands, Ida
APPLICANT: Stryhn, Anette
TITLE OF INVENTION: Therapeutic TB Vaccine
                                                                                    LENGTH: 268
TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     129 LALSAQCPVAIVRPHRVPIGRDAAWIVVEADGSSDIGVLLGAVMAEARLRDSPVRVVTCR 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         128 LAEKAHCPVAVMRSKVDQPASDINWIVVRMTDAPDNEAVLEYAAREAKLRQAPILALGGR 187
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGQLARLVGPSGHPVFRHAECSVLVV 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QSGVGDTGDDVRASLDRWLARWQPRYPDVRVQSAAVHGELLDYLAGLGRSVHMVVLSASD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIVVGIDGSKPAVQAALWAVDEAASRDIPLRILYAIBPDDPGYAAHGAAARKLAAAENAV 68
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  25.6%;
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  Score 357.5;
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  Length
  268;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: US 10/060,428
PRIOR FILING DATE: 2002-01-29
PRIOR APPLICATION NUMBER: US 09/415,884
PRIOR FILING DATE: 1999-10-08
PRIOR FILING DATE: 1999-10-08
PRIOR APPLICATION NUMBER: US 60/116,673
PRIOR FILING DATE: 1999-01-21
PRIOR FILING DATE: 1998-10-18
PRIOR FILING DATE: 1998-10-18
                                                                                                                                                                                                                                              SOFTWARE: Patentin
SEQ ID NO 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 34, Application US/10138473 Publication No. US20030165525A1
                                                                                  Matches
                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/10/138,473
CURRENT FILING DATE: 2002-05-02
                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS: 174
                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION NUMBER: DK 1997 00376 PRIOR FILING DATE: 1997-04-02
                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: US 60/070,488 PRIOR FILING DATE: 1998-01-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILE REFERENCE: 0459-0710P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: ROSENKRANDS, Ida
APPLICANT: RASMUSSEN, Peter Birk
TITLE OF INVENTION: TB Diagnostic Based On Antigens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: ANDERSEN, APPLICANT: WELDINGH
                                                                                                                                                                               LENGTH: 297
TYPE: PRT
ORGANISM: Mycobacterium tuberculosis
                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION NUMBER: DK 1997 01277
                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US 60/044,624 FILING DATE: 1997-04-18
                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE: 1997-11-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             238 AVIGGGEAGQLARLVGPSGHPVFRHAECSVLVVR 271
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100; Conservative
                                       12 IIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKP-----THPSP-----DDYDR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      83
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                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GSALCPVAVIHPSPAEPATTSQVSAVVAEV----DNGVVLRHAFEEARLRGVPLRAVA--
  IIVGIDDSPAAQVAVRWAARDAELRKIPLTLVHAVSPEVATWLEVPLPPGVLRWQQDHGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FVADSHSAHELCGAYQPG-----CAVLTVR 264
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HANSEN, Christina Veggerby
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OKKELS, Li Mei Meng
SKJORT, Rikke Louise Vinther
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                                                                                Conservative
                                                                                                                                                                                                                                                                        version
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                                                                                                   19.1%; Score 267; DB 4; 29.3%; Pred. No. 6.6e-17;
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                                                                                Mismatches 131;
                                                                                                                         Length 297;
                                                                                Indels
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RESULT 6
US-09-738-626-6745
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TYPE: PRT
ORGANISM: Mycobacterium tuberculosis
US-10-450-726-4
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US-10-450-726-4
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                                                         Sequence 6745, Application US/09738626 Publication No. US20020197605A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION NUMBER: PCT/EP01/14551
PRIOR FILING DATE: 2001-12-11
PRIOR APPLICATION NUMBER: 0030368.5
PRIOR FILING DATE: 2000-12-13
NUMBER OF SEQ ID NOS: 21
SOFTWARE: PastSEQ for Windows Version 4.0
SEQ ID NO 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 4, Application US/10450726
Publication No. US20040242471A1
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Best Local Similarity
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                   APPLICANT: NAKAGAWA, SATOSHI APPLICANT: MIZOGUCHI, HIROS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT FILING DATE: 2003-06-13
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Dick, Thomas APPLICANT: Boon, Calvis
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                                                                                                                                                                                                                                                                                                                                                                       RLLGSVSSGLLRHAHCPVVIIHDEDSVMPHPQQAPVLVGVDGSSASELATAIAFDEASRR 186
                                                                                                                                                                                                                                                                                                                                                                                                             SILGSTATELAEKAHCPVAVMRSKVD-QPASDINWIVVRMTDAPDNEAVLEYAAREAKLR 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                      HL--IDDALKVVEQASLRAGP-PTVHSEIVPAAAVPTLVDMSKDAVLMVVGCLGSGRWPG 126
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IIVGIDDSPAAQVAVRWAARDAELRKIPLTLVHAVSPEVATWLEVPLPPGVLRWQQDHGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKP-----THPSP-----DDYDR 58
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ANDO,
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                     HIROSHI
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APPLICANT: Zelder, Oskar

APPLICANT: Haberhauer, Gregor

APPLICANT: Kim, Jun-Mon

APPLICANT: Lee, Heung-Schick

APPLICANT: Lee, Heung-Schick

APPLICANT: Hwang, Byung-Joon

TITLE OF INVENTION: METABOLIC PATHWAY PROTEINS

FILE OF INVENTION: METABOLIC PATHWAY PROTEINS

FILE REFERENCE: BGI-121CP2

CURRENT APPLICATION NUMBER: US/09/746,660A

CURRENT FILING DATE: 2000-12-22

PRIOR APPLICATION NUMBER: 09/606740

PRIOR APPLICATION NUMBER: 09/60124

PRIOR APPLICATION NUMBER: 09/60124

PRIOR APPLICATION NUMBER: 09/60124

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PRIOR APPLICATION NUMBER: 09/60124
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US-09-746-660A-6
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CURRENT APPLICATION NUMBER: US/09/738,626
CURRENT FILING DATE: 2000-12-18
PRIOR APPLICATION NUMBER: JP 99/377484
PRIOR FILING DATE: 1999-12-16
PRIOR FILING DATE: 1999-12-16
PRIOR FILING DATE: 1990-12-16
PRIOR APPLICATION NUMBER: JP 00/159162
PRIOR PRILING DATE: 2000-04-07
PRIOR APPLICATION NUMBER: JP 00/280988
PRIOR FILING DATE: 2000-08-03
PRIOR FILING DATE: 2000-08-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQ ID NOS: 7059
SOFTWARE: Patentin ver. 3.0
SEQ ID NO 6745
LENGTU
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APPLICANT:
APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Match 19.0%;
Local Similarity 28.8%;
tes 85; Conservative 4
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VOKOI, HARUHIKO
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                                                                                                                                                                                                                                                                                                             Schroder, Hart
Zelder, Oskar
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Pred. No. 8.4e-17;
:5; Mismatches 131;
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APPLICATION NUMBER: 60/141031

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PRIOR APPLICATION NUMBER: 60/142101
PRIOR FILING DATE: 1999-07-02
PRIOR APPLICATION NUMBER: 60/148613
PRIOR APPLICATION NUMBER: 60/187970
PRIOR APPLICATION NUMBER: 60/187970
PRIOR FILING DATE: 1900-03-09
PRIOR APPLICATION NUMBER: DE 19931420.9
PRIOR APPLICATION NUMBER: DE 19931420.9
PRIOR APPLICATION NUMBER: DE 19931420.9
PRIOR FILING DATE: 1999-07-08
NUMBER OF SEQ ID NOS: 125
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Publication No.
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Best Local Similarity
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PRIOR FILING DATE: 2000-06-23
PRIOR APPLICATION NUMBER: 09/603124
                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/09/746,660A
CURRENT FILING DATE: 2000-12-22
                                                                                                                                                                                                                                                                                             APPLICANT: Hwang, Byung-Joon
TITLE OF INVENTION: CORYNEBACTERIUM GLUTAMICUM GENES
TITLE OF INVENTION: METABOLIC PATHWAY PROTEINS
FILE REFERENCE: BGI-121CP2
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TYPE: PRT
ORGANISM: Corynebacterium glutamicum
FILING DATE: 1999-07-02
APPLICATION NUMBER: 60/148613
FILING DATE: 1999-08-12
APPLICATION NUMBER: 60/187970
FILING DATE: 2000-03-09
                                                                                                        FILING DATE: 2000-06-23
APPLICATION NUMBER: 60/141031
FILING DATE: 199-06-25
APPLICATION NUMBER: 60/142101
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28.8%; Pred. No. 8.4e-17;
7ative 45; Mismatches 131
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NUMBER OF SEQ ID NOS: 125
SOFTWARE: PatentIn Vers. 2.0
SEQ ID NO 20
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TITLE OF INVENTION: No. US20040043953A1el
FILE REFRERCE: 936, 2000
CURRENT APPLICATION NUMBER: US/10/450,055
CURRENT FILING DATE: 2003-06-10
NUMBER OF SEQ ID NOS: 46
SOFTWARE: Patentin Vers. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 301
TYPE: PRT
ORGANISM: Corynebacterium glutamicum
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TYPE: PRT
ORGANISM: Corynebacterium glutamicum
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                                   ARGAELVAVHTWMDMQVQASLAGLAAAAQQQWDEVERQQTDMLIERLAPLVEKYPSVTVKK
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Pred. No. 8.4e-17;
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Pred. No. 8.4e-17;
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// ORGANISM: Corynebacterium glutamicum
US-11-006-098-314

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Remaining Prior Application data removed -
NUMBER OF SEQ ID NOS: 362
SEQ ID NO 314
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILE REFERENCE: BGI-123CP
CURRENT APPLICATION NUMBER: US/11/006,098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Haberhauer, Gregor
TITLE OF INVENTION: CORYNEBACTERIUM GLUTAMICUM GENES ENCODING
TITLE OF INVENTION: REGULATORY PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Pompejus, Markus
APPLICANT: Kroger, Burkhard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: US/09/602,874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Match 19.0%;
Local Similarity 28.8%;
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FILING DATE: 1999-07-01
APPLICATION NUMBER: 60/151251
FILING DATE: 1999-08-27
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APPLICATION NUMBER: 60/141031
FILING DATE: 1999-06-25
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FILING DATE: 1999-07-09
APPLICATION NUMBER: DE 19932128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: DE 19931420.9 FILING DATE: 1999-07-08
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: DE 19932206.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 1999-07-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: DE 19931419.5 FILING DATE: 1999-07-07
                                                                                   180
240
                                                                                                                                                                   121 GMVMGSVSGAVVSHAKCPVVVVREDSAVNED-SKYGPVVVGVDGSEVSQQATEYAFAEAE 179
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                                                                                ARGAELVAVHTWMDMQVQASLAGLAAAAQQQWDEVERQQTDMLIERLAPLVEKYPSVTVKK
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                                                                                                                                                                                                                                                                                                                                                                                       TMKTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTHPS-----PDDYDR 58
                                                                                                                                                                                                                                                           DLQABALEKINEARDIAHEVAPEIKIGHTIAEGSPIDMLLEMSPDATMIVMGSRGLGGLS 120
                                                                                                                                                                                                                                                                                                 DL-AHAERSLREAQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGRYA 117
                                                                                                                                                                                                                                                                                                                                              TEDIVVVAVDGSDASKQAVRWAANTANKRGIPLRLAS--SYTMPQFLYAEGMVPPQELFD
                                      ITTHTGIARFLADHDERVQLAVIGG-GEAGQLARLVGPSGHPVFRHAECSVLVVR 271
                                                                                                                             LR----
IITRDRPVRALAEASENAQLI, VVGSHGRGGFKGMLLGSTSRALLQSAPCPMVVVR
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b. US20050153402A1
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                                                                                                                         QAPILALGGRPEELREIPDGEFE---RRVQDWHHRHPDVRVYP
                                                                                                                                                                                                                                                                                                                                                                                                                                 45; Mismatches 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 266; DB 6;
Pred. No. 8.4e-17;
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CURRENT FILING DATE: 2003-02-20
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR FILING DATE: 2000-05-26
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 53861
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                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: Identification of Essential Genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: 60/267,636
FILING DATE: 2001-02-09
APPLICATION NUMBER: 60/269,308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 60/242,578
FILING DATE: 2000-10-23
APPLICATION NUMBER: 60/253,625
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FILLING DATE: 2000-09-06
APPLICATION NUMBER: 60/230,347
FILLING DATE: 2000-09-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 2001-02-16
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                                                                          181
240 VITRDRPVRALEDCAHNAQLLVVGSHGRGGFRGMLLGSTSRALLQSAPCPMVVVR
                                                                                                                                                                                        120 ILGSTATELAEKAHCEVAVMRSKVDQPASDINW---IVVRMTDAPDNEAVLEYAAREAKL 176
                                                                                                                                                                                                                                63
                                                                                                                                                                                                                                                                                                                                               12 IIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTHPSPDD-YDRDLAHAERSLREA
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                                                                                                                                                                                                                                                                                                                                                                                          84;
                                                                                                                                                     VMGSVSAAVVSHADCPVVVVRS---DNHVTETNKYGPVVVGVDGSDVSQRATEFAFEEAQA
                                                                                                                                                                                                                              QSETMDMIBAARVVAHEVAPDIKIGYVIAEGSPIDMLLDMSSDVTMIVMGSRGLGGLSGM 122
                                                                                                                                                                                                                                                                    QS----AVEAAGKL-----VKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGRYASS 119
                                                                                                                                                                                                                                                                                                           VVVAVDGSEASQNAVRWAANTANKRGVPLRLAA----SYTMPQFLYAEGMVPPQELFDEL
                                  ITTHTGIARFLADHDERVQLAVIGG-GEAGQLARLVGPSGHPVFRHAECSVLVVR
                                                                            RGAKLVAIHTWMDMQVQASLAGLAAAQQEW-EIIEKEQTTLLKDRLQPLLERFFDVEVEM
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Zyskind, Jud
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Malone, Cheryl
Haselbeck, Robert
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Forsyth, R.
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                                                                                                                                                                                                                                                                                                                                                                                          Conservative
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28.5%;
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                                                                                                                                                                                                                                                                                                                                                                                          46;
                                                                                                                                                                                                                                                                                                                                                                                                            Score 249; DB 4;
Pred. No. 3.6e-15;
                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                        123;
                                                                                                                                                                                                                                                                                                                                                                                                                          Length 300;
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    294
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PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR PILING DATE: 2001-05-30
PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 8814
LENGTH: 290
TYPE: PRT
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US-10-156-761-8839
APPLICANT: ISHIKAWA, JUN
APPLICANT: ISHIKAWA, HIROSHI
APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
FULE REFERENCE: 249-262
CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION UMMBER: JP 2001-204089
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR FILING DATE: 2001-05-02
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US-10-156-761-8814
                                                                                                                                                                                                                                                      GENERAL INFORMATION:
APPLICANT: OMURA, SATOSHI
APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
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Matches
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APPLICANT:
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APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: OMURA, SATOSHI APPLICANT: IKEDA, HARUO
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             59 QVIADDIVEAAAQRAHRRHADVKISTDVLPEEPA-PALLREGNEAFALVLGSRGRSGLAE
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87; Conser
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SILGSTATELAEKAHCPVAVMRSKVDQ--PASDINWIVVRMTDAPDNEAVLEYAAREAKL 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RGCAVEAVRAWRRPAREALGHPLSSRRAARLHEERATEVLEAVLSGAPPDVELRRRAVEG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LVVGVDGSESSMRAVDWAADEAALRGVPLRLV-----YASLWERYEGAALADGLGRPPE 58
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HORIKAWA, HIROSHI
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29.7%; Pred. No. 1.4e-14;
tive 38; Mismatches 123
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                        286
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TITLE OF INVENTION: Rice Nucleic Acid Molecules and Other Molecules Associated With TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement FILE REFERENCE: 38-21(53221)B CURRENT FILING DATE: 2003-05-14 NUMBER OF SEQ ID NOS: 2003-05-14 NUMBER OF SEQ ID NOS: 204966 SEQ ID NO 153439 ELEGIH: 185
TYPE: PRT
ORGANTON
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US-10-437-963-153439
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; NUMBER OF SEQ
; SEQ ID NO 8839
; LENGTH: 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Loc
Matches
                                                                                                                                                                                       Matches
                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 153439, Application US/10437963
Publication No. US/0040123343A1
GENERAL INFORMATION:
APPLICANT: La Rosa, Thomas J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                      ORGANISM: Oryza sativa FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                238 TDVLERVIPGHPG--HHLLRASIRAGLLVIGRRTS---APGLGRAARSLIHHAGCPVAVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  212 - DVRVYPITTHTGIARFLADHDERVQLAVIGGGEAGQLARLVGPSGHPVFRHAECSVLVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     119 VÁLAVÁARÁARPVVLVRTGELAEDERMPÁDDGTPPGRAAYLPVVLGLDLDHP-ADRLIAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   124 TATELAEKAHCPVAVMRS-----KVDQPASD-----INWIVVRMTDAPDNEAVLEY 169
16 GEPGAAAGTMK-VVVAVDASEESLNALSWALDNVIGRRAGAVSVVVVHAQH-GPDHFVYP
                                                                                     60 L-----AHAERSLREAQSAVEAAGKLVKIETD-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    66 AVQLAYAHPALDIIAR--RTET----PAVPALLAAAAEAETLVLGSRGFTGFAGFLVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                64 ERSLREAQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIGRYASSILGS
                                                      74 VAAHGIGSIAYAPASAIESMRKAQE--EISRKVVSRALDVCKQREVSATGAIVEGDAKEA 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10
                                                                                                                                                                                     48;
                                                                                                                                                      5 GEP----TMKTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTHPSPDDYDRD 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        σ
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87; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AFEAAAVRSAPLHVVHTWTTLPPTGHAPGAPLPGDAAEREEGARRTLTTTLQPWRHKFPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAREAKLROAPI------LALGGRPEELREIPDGEFERRVODWHHRHP-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RTITVGIDGSRTGLDAADWAAREASRRRLPLRLLHAGAEPPVPAPVPDVDLPARTALDRA 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSV-IKPTHPSP-DDYD----RDLAHA
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                                                                                                                                                                                       Conservative
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29.0%; Pred. No. 2e-11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       37;
                                                                                                                                                                                                       Score 143.5;
Pred. No. 2.5
                                                                                                                                                                                         Mismatches
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                                                                                                                                                                                                                       DB 4; Length 185;
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                                                                                                                                                                                         59;
                                                                                                                                                                                         Indels
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                                                                                                                                                                                     Gaps
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132 ICQAVEEMHADMLVLGSRGLGKIKRAFLGSVSDYLVHHACCPVLVVK 178

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APPLICANT: La Rosa Thomas J
APPLICANT: Kovalic David K
APPLICANT: Zhou Yihua
APPLICANT: Cao Yongwei
TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21 (53223) B
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 285684
SEQ ID NO 154598
LENGTH: 163
TYPE: PRT
ORGANISM: Glycine max
PEATURE:
ORGANISM: Glycine max
PEATURE:
OTHER INFORMATION: Clone ID: PAT_MRT3847_110623C.1.pep
US-10-424-599-154598
Search completed: March 23, 2006, 06:28:15 Job time: 58.1999 secs
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US-10-424-599-154598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 154598, Application US/10424599 Publication No. US20040031072A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 9.3%; Score 130.5; DB 4; Length 163; Best Local Similarity 29.3%; Pred. No. 0.00037; Matches 46; Conservative 25; Mismatches 69; Indels 17;
                                                                                                    121 SMLVVGSHGYGTLKRAVLGSVSDYCAHHAHCTVMIVK 157
                                                                                                                                                   104 EMICYGSVGIGRYASSILGSTATELAEKAHCPVAVMR 140
                                                                                                                                                                                                    61 GPGAAEVLPVVEADLRKTAAKITERATELCKKKSVNDVAVEVLEGDPRNVLCEAVEKHQA 120
                                                                                                                                                                                                                                             57 ----DRDLAHAERSLRE-AQSAVEAAGKLVK-----IETDIPRGPAGPVLVEA--SRDA 103
                                                                                                                                                                                                                                                                                                 1 MSGRGEPTMKTIIVGIDGSHAAITAALWGVDEAISRA-VPLRLVSVI--KPTHPSPDDY- 56
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COLOSIN MORE BOOK SILLY

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Minimum |
Maximum |
                                                                                                                                                                                                                                                                                     Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                            Post-processing:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OM protein -
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                          DB seq length: 0
DB seq length: 2000000000
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                                                                                      Published_Applications_AA_New:*

1: /cgn2_6/ptodata/1/pubpaa/USO8_NEW_PUB.pep:*

2: /cgn2_6/ptodata/1/pubpaa/USO8_NEW_PUB.pep:*

3: /cgn2_6/ptodata/1/pubpaa/USO7_NEW_PUB.pep:*

4: /cgn2_6/ptodata/1/pubpaa/PCT_NEW_PUB.pep:*

5: /cgn2_6/ptodata/1/pubpaa/USO9_NEW_PUB.pep:*

6: /cgn2_6/ptodata/1/pubpaa/USO1_NEW_PUB.pep:*

7: /cgn2_6/ptodata/1/pubpaa/USO1_NEW_PUB.pep:*

8: /cgn2_6/ptodata/1/pubpaa/USO0_NEW_PUB.pep:*
                                                                                                  169630 seqs, 28622889 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gapop 10.0 , Gapext 0.5
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1397
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                                                                                                                                                                                                                                                                                                                              Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MSGRGEPTMKTIIVGIDGSH.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GenCore version 5.1.7 Copyright (c) 1993 - 2006 Biocceleration Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (without alignments)
1192.746 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .GPSGHPVFRHAECSVLVVRR 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  169630
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# SUMMARIES

| 25<br>25           | J ( | 2                   | 22                 | 21                 | 20                 | 19                  | 18                 | 17                | 16                  | 15                 | 14                  | 13                   | 12                   | 11                   | 10                   | 9                    | 8                    | 7                 | 6                   | s                   | 4                   | ω                  | 2                  | _                 | Result<br>No.         |
|--------------------|-----|---------------------|--------------------|--------------------|--------------------|---------------------|--------------------|-------------------|---------------------|--------------------|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-------------------|---------------------|---------------------|---------------------|--------------------|--------------------|-------------------|-----------------------|
| 106.5              | 100 | 107 5               | 109                | 112                | 114                | 116                 | 116.5              | 116.5             | 117.5               | 118.5              | 120                 | 120.5                | 122                  | 122                  | 122.5                | 125.5                | 128.5                | 128.5             | 130.5               | 130.5               | 130.5               | 149                | 262.5              | 266               | Score                 |
| 7.6                | 1 - | 7                   | 7.8                | 8.0                | 8.2                | 8.3                 | 8.3                | 8.3               | 8.4                 | 8.5                | 8.6                 | 8.6                  | 8.7                  | 8.7                  | 8.8                  | 9.0                  | 9.2                  | 9.2               | 9.3                 | 9.3                 | 9.3                 | 10.7               | 18.8               | 19.0              | Query<br>Match Length |
| 162                | 170 | 7,7                 | 186                | 182                | 169                | 169                 | 169                | 162               | 152                 | 175                | 172                 | 151                  | 179                  | 171                  | 174                  | 153                  | 171                  | 171               | 165                 | 163                 | 163                 | 152                | 305                | 301               | 1                     |
| 7 '                | ٦,  | 3                   | 7                  | 7                  | 7                  | 7                   | 7                  | 7                 | 7                   | 7                  | 7                   | 7                    | 7                    | 7                    | 7                    | 7                    | 7                    | 7                 | 7                   | 7                   | 7                   | 7                  | 7                  | 7                 | BB                    |
| US-11-08/-099-9020 |     | 115-11-087-099-3411 | US-11-087-099-7766 | US-11-087-099-2660 | US-11-087-099-4994 | US-11-087-099-10381 | US-11-087-099-2259 | US-11-087-099-436 | US-11-096-568A-4792 | US-11-087-099-7223 | US-11-087-099-11256 | US-11-096-568A-15855 | US-11-096-568A-27882 | US-11-096-568A-32572 | US-11-096-568A-27471 | US-11-096-568A-15854 | US-11-096-568A-15853 | US-11-087-099-505 | US-11-096-568A-4790 | US-11-096-568A-4791 | US-11-087-099-11409 | US-11-087-099-6347 | US-11-087-099-3468 | US-11-055-822-14  | ID                    |
| Sequence 1508, Ap  |     |                     |                    |                    | Sequence 4994, Ap  | 10381,              | 2259,              | 436, F            | 4792,               | Sequence 7223, Ap  | Sequence 11256, 1   | Sequence 15855, 1    | Sequence 27882, 1    | Sequence 32572, 1    | Sequence 27471, 1    |                      | 15853                | 505, 2            | Sequence 4790, Ap   | 4791,               | e 11409,            | 6347,              | Sequence 3468, Ap  | Sequence 14, Appl | Description           |

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8 TMKTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTHPS------PDDYDR 58

Query Match
Best Local Similarity
Matches 85; Conserv

Conservative

45;

19.0%;

Score 266; DB 7; I Pred. No. 1.1e-15; 5; Mismatches 131;

Length 301; Indels 34;

Gaps

8

| 101.5 7.6 181 7 US-11-087-099-10726 103.5 7.4 162 7 US-11-087-099-12270 103 7.4 159 7 US-11-087-099-12270 103 7.4 161 7 US-11-087-099-2536 101.5 7.3 162 7 US-11-087-099-2126 101.5 7.3 162 7 US-11-087-099-10134 101.5 7.3 162 7 US-11-096-568A-10261 101.5 7.3 203 7 US-11-096-568A-10261 101.5 7.2 160 7 US-11-087-099-1178 100.5 7.2 160 7 US-11-087-099-6096 100.5 7.2 160 7 US-11-087-099-6096 100.5 7.2 160 7 US-11-087-099-6096 100.5 7.2 160 7 US-11-087-099-6096 100.5 7.2 160 7 US-11-087-099-6096 100.5 7.2 160 7 US-11-087-099-6096 100.5 7.0 164 7 US-11-087-099-603 100.5 7.0 164 7 US-11-087-099-603 100.5 7.0 164 7 US-11-087-099-6603 100.5 7.0 164 7 US-11-087-099-6603 100.5 7.0 164 7 US-11-087-099-6603 100.5 7.0 164 7 US-11-087-099-6603 100.5 7.0 164 7 US-11-087-099-6603 100.5 7.0 164 7 US-11-087-099-6603 100.5 7.0 164 7 US-11-087-099-6603 100.5 7.0 164 7 US-11-087-099-6603 100.5 7.0 164 7 US-11-087-099-6603 100.5 7.0 164 7 US-11-087-099-6603 100.5 7.0 164 7 US-11-087-099-6603 100.5 7.0 164 7 US-11-087-099-6603 100.5 7.0 164 7 US-11-087-099-6603 100.5 7.0 164 7 US-11-087-099-6603 | 45                  | 44       | 43              | 42                 | 41                 | 40                 | 39                 | 38                 | 37                   | 36                 | 35                   | 34                 | 33                  | 32     | 31                  | 30                   | 29                 | 28                  | 27                 | 26       |
|--|---------------------|----------|-----------------|--------------------|--------------------|--------------------|--------------------|--------------------|----------------------|--------------------|----------------------|--------------------|---------------------|--------|---------------------|----------------------|--------------------|---------------------|--------------------|----------|
| 181 7 US-11 162 7 US-11 163 7 US-11 162 7 US-11 162 7 US-11 162 7 US-11 163 7 US-11 164 7 US-11 171 7 US-11 171 7 US-11 171 7 US-11 171 7 US-11 171 7 US-11 174 7 US-11 175 7 US-11 177 7 US-11 178 7 US-11 179 7 US-11 179 7 US-11  | 97                  | 97       | 97.5            | 97.5               | 98                 | 98.5               | 99                 | 99                 | 99                   | 99                 | 99                   | 100.5              | 101                 | 101.5  | 101.5               | 101.5                | 103                | 103                 | 103.5              | 106.5    |
| 7 US-11<br>7 US-11<br>7 US-11<br>7 US-11<br>7 US-11<br>7 US-11<br>7 US-11<br>7 US-11<br>7 US-11<br>7 US-11<br>7 US-11  | 6.9                 | 6.9      | 7.0             | 7.0                | 7.0                | 7.1                | 7.1                | 7.1                | 7.1                  | 7.1                | 7.1                  | 7.2                | 7.2                 | 7.3    | 7.3                 | 7.3                  | 7.4                | 7.4                 | 7.4                | 7.6      |
| 7 US-11-087-099-10726 7 US-11-087-099-5731 7 US-11-087-099-12270 7 US-11-087-099-12270 7 US-11-087-099-10134 7 US-11-087-099-10134 7 US-11-087-099-10261 7 US-11-087-099-6096 7 US-11-087-099-6096 7 US-11-087-099-6096 7 US-11-087-099-6096 7 US-11-087-099-6097 9 US-11-087-099-6097 9 US-11-087-099-6097 9 US-11-087-099-6097 9 US-11-087-099-6097 9 US-11-087-099-6003 9 US-11-087-099-603 9 US-11-087-099-603 9 US-11-087-099-603 9 US-11-087-099-603 9 US-11-087-099-603   | 179                 | 154      | 3655            | 164                | 171                | 270                | 171                | 171                | 162                  | 161                | 125                  | 160                | 153                 | 203    | 162                 | 162                  | 161                | 159                 | 162                | 181      |
| US-11-087-099-10726 US-11-087-099-5131 US-11-087-099-1270 US-11-087-099-1210 US-11-087-099-10134 US-11-087-099-10134 US-11-096-568A-10261 US-11-087-099-3178 US-11-087-099-699 US-11-087-099-699 US-11-087-099-699 US-11-087-099-8469 US-11-087-099-8469 US-11-087-099-8469 US-11-087-099-8499 US-11-087-099-8603   | 7                   | 7        | 7               | 7                  | 7                  | σ                  | 7                  | 7                  | 7                    | 7                  | 7                    | 7                  | 7                   | 7      | 7                   | 7                    | 7                  | 7                   | 7                  | 7        |
|  | US-11-096-568A-6711 | Ξ        | US-11-075-185-5 | US-11-087-099-6603 | US-11-087-099-7706 | US-10-467-657-1630 | US-11-087-099-8499 | US-11-087-099-8466 | US-11-096-568A-10262 | US-11-087-099-6989 | US-11-087-099-6096   | US-11-087-099-3178 | US-11-096-568A-1509 |        | US-11-087-099-10134 | US-11-087-099-9120   | US-11-087-099-2546 | US-11-087-099-12270 | US-11-087-099-5731 | -11      |
|  | 6711, Ap            | 27472, F | Appl:           | 6603, A            | 7706, Ap           | •                  | •                  | •                  | .٠                   | 89, Ap             | 6096, A <sub>J</sub> |                    | 1509, A             | 10261, | 10134, 2            | 9120, A <sub>l</sub> | 2546, Ap           | 12270,              | 5731, A            | 10726, 1 |

# ALIGNMENTS

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US-11-055-822-14
(S-11-055-822-14); Sequence 14, Application US/11055822; Publication No. US20050260707A1; GENERAL INFORMATION:
; LENGTH: 301
TYPE: PRT
; ORGANISM: Corynebacterium glutamicum
US-11-055-822-14
                                                                                                                                                                                                                                                                              CURRENT FILING DATE: 2005-02-11

PRIOR APPLICATION NUMBER: 09/606,740

PRIOR FILING DATE: 2000-06-23

PRIOR FILING DATE: 1999-06-25

PRIOR PELICATION NUMBER: 60/142,101

PRIOR PILING DATE: 1999-07-02

PRIOR APPLICATION NUMBER: 60/148,613

PRIOR APPLICATION NUMBER: 60/187,970

PRIOR APPLICATION NUMBER: 06/187,970

PRIOR APPLICATION NUMBER: DE 19930476.9

PRIOR PILING DATE: 1999-07-01

PRIOR PILING DATE: 1999-07-01

PRIOR PILING DATE: 1999-07-01

PRIOR PILING DATE: 1999-07-01

PRIOR PILING DATE: 1999-07-08

PRIOR APPLICATION NUMBER: DE 19931415.2

PRIOR APPLICATION NUMBER: DE 19931419.5

PRIOR APPLICATION NUMBER: DE 19931419.5

PRIOR APPLICATION NUMBER: DE 19931419.5

PRIOR APPLICATION NUMBER: DE 19931419.5

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PRIOR APPLICATION NUMBER: DE 19931419.5

PRIOR APPLICATION NUMBER: DE 19931419.5

PRIOR APPLICATION NUMBER: DE 19931419.5
                                                                                                                                          PRIOR FILING DATE: 1999-07-08
Remaining Prior Application data removed
NUMBER OF SEQ ID NOS: 1158
SEQ ID NO 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILE REFERENCE: BGI-121CPCN
CURRENT APPLICATION NUMBER: US/11/055,822
CURRENT FILING DATE: 2005-02-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Haberhauer, Gregor
TITLE OF INVENTION: CORYNEBACTERIUM GLUTAMICUM GENES ENCODING
TITLE OF INVENTION: METABOLIC PATHWAY PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Pompejus, Markus
APPLICANT: Kroger, Burkhard
APPLICANT: Schroder, Hartwi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Schroder, Hartwig
Zelder, Oskar
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RESULT 3
US-11-087-099-6347
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US-11-087-099-3468
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GENERAL INFORMATION:
APPLICANT: Abad, Mark S. et al.
TITLE OF INVENTION: Genes and Uses
                                                   Sequence 6347, Application US/11087099
Publication No. US20060041961A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Abad, Mark S. et al.
TITLE OF INVENTION: Genes and Uses for Pl.
FILE REFERENCE: 38-21(53450)B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
NUMBER OF SEQ ID NOS: 12464
SEQ ID NO 3468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 3468, Application US/11087099 Publication No. US20060041961A1 GENERAL INFORMATION:
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TYPE: PRT
ORGANISM: Thermobifida fusca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                   231 DEARTPLTORVPVRVETPEKHPÄAALLDEGADADLIVVGSRGRGGFTGLLLGSVSQQVLN
                                                                                                                                                                                                                                                                                                                                            169
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             h 18.8%;
Similarity 28.7%;
                                                                                                                                                                                                 HAECSVLVVR 271
                                                                                                                                                                                                                                                                                                         FALVEAERLRAELVAV----YAWQAPDAPVDPFTVLQADVAVDREQQVARAREWLLRTV
                                                                                                                                                                                                                                                                                                                                            YAAREAKLRQAPILALGGRPEELREIPDGEFE------RRVQDWHHRHP
                                                                                                                                                                                                                                                                                                                                                                               GSRGYSGVASLFLGSVAQRVASHATCPVVVVPPTSQEAAARRGRVVVGVDGSEHAAAALR
                                                                                                                                                                                                                                                                                                                                                                                                              GSVGIGRYASSILGSTATELAEKAHCPVAVMRSKVDQPASDINWIVVRMTDAPDNEAVLE 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     THPSPDDYDRDLAHAERSLREAQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAEMICV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MSGRGEPTMKTIIVGIDGSHAAITAALWGVDEAISRAVPLRLV-----SVIKP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GMVMGSVSGAVVSHAKCPVVVVREDSAVNED-SKYGPVVVGVDGSEVSQQATEYAFAEAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SSILGSTATELAEKAHCPVAVMR--SKVDQPASDINWIVVRMTDAPDNEAVLEYAAREAK 175
                                                                                                                                                                HAVVPVAVVR 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAPSPEVSQAAKALLEEALRRVQEAAPS----LRAVTEVSRAEAHHALLKSAQDAELLVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MSDR-ETVPGTVVVGVDGSEGSLHALDWAIDAAAGRGATLRLVYAMGLPLVTVPLGGPIR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IITRDRPVRALAEASENAQLLVVGSHGRGGFKGMLLGSTSRALLQSAPCPMMVVR 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ARGAEL VAVHTWMDMQVQASLAGLAAAAQQQWDEVERQQTDMLIERLAPLVEKYPSVTVKK
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LR-----RRVQDWHHRHPDVRVYP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              41; Mismatches 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 262.5; DB 7;
Pred. No. 2.3e-15;
                                                                                                                                                                                                                                                                      -ARFLADHDERVQLAVIGG-GEAGQLARLVGPSGHPVFR
 for Plant Improvement
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Sequence 4791, Application US/11096568A

Publication No. US20060048240A1

GENERAL INFORMATION:
APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence-Determined DNA |
TITLE OF INVENTION: Therby
FILLE REFERENCE: 2750-15920US2
CURRENT APPLICATION UMMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
                                                                                                                                                                                                                RESULT 5
US-11-096-568A-4791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; ORGANISM: Glycine max US-11-087-099-11409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 4
US-11-087-099-11409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; ORGANISM: Streptomyces coelicolor A3(2)
US-11-087-099-6347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 11409, Application US/11087099
Publication No. US20060041961A1
GENERAL INFORMATION:
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Matches
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LENGTH: 163
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LENGTH: 152
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
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TITLE OF INVENTION: Genes and Uses for Pli
FILE REFERENCE: 38-21(53450)B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
NUMBER OF SEQ ID NOS: 12464
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CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
NUMBER OF SEQ ID NOS: 12464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: PRT
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                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                              104 EMICVGSVGIGRYASSILGSTATELAEKAHCPVAVMR 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          118 AFÁRAMLGSVSQRCAQHAACPVVVVRQETE 147
                                                                                                                                                                                                                                                                                                                                                                                       61 GPGAAEVLPVVEADLRKTAAKITERATELCKKKSVNDVAVEVLEGDPRNVLCEAVEKHQA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MSGRGEPTMKTIIVGIDGSHAAITAALWGVDBAISRA-VPLRLVSVI--KPTHPSPDDY-
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DYDRDLAHAERSLREAQSAVEAAGKLVKIETDIPRGPAGPVLVEASRDAEMICVGSVGIG
                                                                                                                                                                                                                                                                                                                                                                                                                              ----DRDLAHAERSLRE-AQSAVEAAGKLVK-----IETDIPRGPAGPVLVEA--SRDA 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MATSGSETKQVMVIGIDDSDFSTYALQWTLDHLLSPANVPKFKIFLVYAKPSVASAVGFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RYASSILGSTATELAEKAHCPVAVMRSKVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DPDFDLEQARERFAAELEATFPGERPPGLKEILVEGDPSETLIRASQGAELLVVGRRGRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EPTMKTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVSVIKPTH----PS-----PD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EPTAR-VVVGVDGSPSSYAALRWA--DRYARAVG----GVVEAVHVWDTPSAVGFAGPAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
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29.3%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 130.5; DB 7
Pred. No. 0.00026;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 149; DB 7
Pred. No. 6e-06;
6; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Plant Improvement
                                                                                                                DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 144
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                                                                                                                Fragments
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                                                                                                                                                                                                                                                                                                       157
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                                                                                                                and
                                                                                                                Corresponding Polypeptides
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RESULT 7

US-11-087-099-505

; Sequence 505, Application US/11087099

; Publication No. US20060041961A1

; GENERAL INFORMATION:

; APPLICANT: Abad, Mark S. et al.

; TITLE OF INVENTION: Genes and Uses for
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US-11-096-568A-4790
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SEQ ID NO 4790
                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
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NAME/KEY: misc_feature
LOCATION: (1)..(163)
OTHER INFORMATION: Ceres Seq. ID no.
-11-096-568A-4791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQ ID NO 4791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: Sequence-Determined DNITITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
NAME/KEY: misc_feature
LOCATION: (1)..(165)
OTHER INFORMATION: Cere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 165
TYPE: PRT
ORGANISM: Glycine max
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 SMLVVGSHGYGTLKRAVLGSVSDYCAHHAHCTVMIVK 157
                                                                                                                                                                                                                                                                                     63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
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                                                                                                                                                                                                                                                                                                                                                                                                 1 MSGRGEPTMKTIIVGIDGSHAAITAALWGVDEAISRA-VPLRLVSVI--KPTHPSPDDY- 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MSGRGEPTMKTIIVGIDGSHAAITAALWGVDEAISRA-VPLRLVSVI--KPTHPSPDDY-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GPGAAEVLPVVEADLRKTAAKITERATELCKKKSVNDVAVEVLEGDPRNVLCEAVEKHQA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMICVGSVGIGRYASSILGSTATELAEKAHCPVAVMR 140
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                                                                                                                                                                                                            SMLVVGSHGYGTLKRAVLGSVSDYCAHHAHCTVMIVK 159
                                                                                                                                                                                                                                                                                     GPGAAEVLPVVEADLRKTAAKITERATELCKKKSVNDVAVEVLEGDPRNVLCEAVEKHQA
                                                                                                                                                                                                                                                                                                                        ----DRDLAHAERSLRB-AQSAVEAAGKLVK-----IETDIPRGPAGPVLVEA--SRDA 103
                                                                                                                                                                                                                                                                                                                                                            MATSGSETKOVMVIGIDDSDFSTYALOWTLDHLLSPANVPKFKIFLVYAKPSVASAVGFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ----DRDLAHAERSLRE-AQSAVEAAGKLVK-----IETDIPRGPAGPVLVEA--SRDA
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ilarity 29.3%;
Conservative (
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                                     Genes and Uses for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ceres Seq. ID no. 14304184
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                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 130.5; DB 7; Pred. No. 0.00027;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 130.5; DB 7;
Pred. No. 0.00026;
5; Mismatches 69;
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                                     Plant Improvement
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                                                                                                                                                                                                                                                                                                                                                                                                                                      69;
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                                                                                                                                   US-11-096-568A-15854
                                     Sequence 15854, Application US/11096568A Publication No. US20060048240A1 GENERAL INFORMATION:
APPLICANT: Alexandrov, Nickolai et al. TITLE OF INVENTION: Sequence-Determined
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RESULT 9
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US-11-087-099-505
                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 15853
LENGTH: 171
TYPE: PRT
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LENGTH: 171
TYPE: PRT
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GENERAL INFORMATION:
APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence-Determined DNA
TITLE OF INVENTION: Therby
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                                                                                                                                                                                                                                                                     Matches
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CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
NUMBER OF SEQ ID NOS: 12464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILE REFERENCE: 2750-1592PUS2
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NAME/KEY: misc_feature
LOCATION: (1)...(171)
OTHER INFORMATION: Cere
                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Zea mays subsp.
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                                                     135 HGYGAIKRAVLGSVSDYCAHHAHCTVMIVK 164
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                                                                                                                                                         58 RDLAHAERSL-REAQSAVEAAGKLVKIETDIP----RGPAGPVLVEA--SRDAEMICVGS 110
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                                                                                                                                                                                                                                                                   51;
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51; Conserv
                                                                                     VGIGRYASSILGSTATELAEKAHCPVAVMR 140
                                                                                                                          -VLPYVEADLKRSALRVVEKAKGLCTQASDAVFEALEGDARNVLCEAVERHGAEMLVVGS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PTMKTIIVGIDGSHAAITAALWGVDEAISRAVP--LRLVSV-IKPTHPS-----PDDYD
                                                                                                                                                                                                PGKMTMVVGVDESEHSFYALQWALQHFFPPGQPQQYRLVVVTAKPTAASAVGLAGPGAAD
                                                                                                                                                                                                                              PTMKTIIVGIDGSHAAITAALWGVDEAISRAVP--LRLVSV-IKPTHPS-----PDDYD 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PGKMTMVVGVDESEHSFYALQWALQHFFPPGQPQQYRLVVVTAKPTAASAVGLAGPGAAD
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                                                                                                                                                                                                                                                                                                                                                        Seq.
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Pred. No. 0.00042;
4; Mismatches 68
                                                                                                                                                                                                                                                                                    Score 128.5; DB 7
Pred. No. 0.00042;
                                                                                                                                                                                                                                                                                                                                                          ID no.
                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                            12349153
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                                                                                                                                                                                                                                                                                                      DB 7;
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                                                                                                                                                                                                                                                                                                    Length 171;
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Sequence-Determined DNA Fragments

and

Corresponding Polypeptides

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US-11-096-568A-27471
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence-Determined DNA Fragments and Corresponding Polypeptides
TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 27471
LENGTH: 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 27471, Application US/11096568A Publication No. US20060048240A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 15854
                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                            Best Local Similarity
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FEATURE:
NAME/KEY: misc feature
LOCATION: (1). (153)
OTHER INFORMATION: Ceres Seq. ID no.
                                                                                                                                                                                                                                                                                                                                                                             FEATURE: misc_feature
NAME/KEY: misc_feature
LOCATION: (1)...(174)
OTHER INFORMATION: Ceres Seq. ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: PRT
ORGANISM: Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ENGTH: 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                  146
                                                                      113 VIGDPKYKICEAVENLHADLLVMGSRAYGRIKRMFLGSVSNYCTNHAHCPVVIIKPKEDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 AIKRAVLGSVSDYCAHHAHCTVMIVK 146
                                                                                                        88 PRGPAGPVLVEASRD--AEMICVGSVGIGRYASSILGSTATELAEKAHCPVAVMRSKVDQ 145
                                                                                                                                             59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62 HAERSI-REAQSAVEAAGKIVKIETDIP----RGPAGPVIVEA--SRDAEMICVGSVGIG 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11 TIIVGIDGSHAAITAALWGVDEAISRAVP--LRLVSV-IKPTHPS-----PDDYDRDLA 61
                                                                                                                                                                                                                                                                                          41;
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SA
                                  PA 147
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                                                                                                                                            PGTIPFGGPSGLEVPAFTAAIEQHQKRITDTILEHA----SQICAEKSVSRVNVKTQV
                                                                                                                                                                                -----DYDRDLAHAERSLREAQSAVEAAGKLVKIETDI 87
                                                                                                                                                                                                                  SLNCVVVAVDGSEVSMEALRWALDN-----LKLSSSSSDSSFVVLHVQPSPSVAAGVS
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174
                                                                                                                                                                                                                                                                                          Conservative
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Pred. No. 0.00066;
                                                                                                                                                                                                                                                                                      Score 122.5; DB 7;
Pred. No. 0.0014;
5; Mismatches 61;
                                                                                                                                                                                                                                                                                                                                                                                 no.
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                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                          Length 174;
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                                                                                                                                            112
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GENERAL INFORMATION:
APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence Determined DNA I
TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 27882
LENGTH: 179
                                   Query Match
Best Local Similarity
Tatches 43; Conserva
                                                                                                                       GRGANISM: Arabidopsis thaliana FEATURE:
REATURE:
RAME/KEY: misc_feature
LOCATION: (1)...(179)
OTHER INFORMATION: Ceres Seq.
US-11-096-568A-27882
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; NAME/KEY: misc feature

; LOCATION: (1).-(171)

; OTHER INFORMATION: Ceres Seq. ID no. 13593512

US-11-096-568A-32572
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US-11-096-568A-27882
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US-11-096-568A-32572
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CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 32572
LENGTH: 171
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TITLE OF INVENTION: Sequence-Determined DNA Fragments and Corresponding Polypeptides I
TITLE OF INVENTION: Therby
                                                                                                                                                                                                                                   TYPE: PRT
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41; Conserva
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TMKTIIVGIDGSHAAITAALWGVDEAISRAVPLRLVS-----VIKPTHPSPD-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SLNCVVVAVDGSEVSMEALRWALDN-----LKLSSSSSDSSFVVLHVQPSPSVAAGVS
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                                                     Conservative
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                                                                    8.7%; Score 122; DB 7;
23.2%; Pred. No. 0.0016;
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; Pred. No. 0.00
24; Mismatches
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                                                     Mismatches
                                                                                                                                             no.
                                                                                                                                             2123864
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                                                     61,
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                                                                                       Length 179;
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                                                     56;
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APPLICANT: Abad, Mark S. et al.
TITLE OF INVENTION: Genes and Uses for Plant Imp.
FILE REFERENCE: 38-21(53450)B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
NUMBER OF SEQ ID NOS: 12464
SEQ ID NO 11256
LENGTH: 172
TYPE: PRT
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; NAME/KEY: misc feature
; LOCATION: (1). (151)
; OTHER INFORMATION: Ceres Seq. ID no. 12349155
US-11-096-568A-15855
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US-11-087-099-11256
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US-11-096-568A-15855
                                                              GRGANISM: Triticum aestivum US-11-087-099-11256
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CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 15855
LENGTH: 151
                                                                                                                                                                                                                                                                                   Sequence 11256, Application US/11087099 Publication No. US20060041961A1 GENERAL INFORMATION:
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APPLICANT: Alexandrov, Nickolai et
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Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MVVGVDESEHSFYALQWALQHFFPPGQPQQYRLVVVTAKPTAASAVGLAGPGAAD-VLPY
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                                                                                                                                                                                                                                                                                                                                                                                                                                 IKRAVLGSVSDYCAHHAHCTVMIVK 144
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8.6%; Score 120.5; DB 7; ilarity 33.8%; Pred. No. 0.0017; Conservative 14; Mismatches 65;
    8.6%;
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    Score 120; DB 7;
Pred. No. 0.0023;
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                      Length 172;
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RESULT 15
US-11-087-099-7223
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APPLICANT: Abad, Mark S. et al.
APPLICANT: Abad, Mark S. et al.
TITLE OF INVENTION: Genes and Uses for Plant Improvement
FILE REFERENCE: 38-21(53450) B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
NUMBER OF SEQ ID NOS: 12464
SEQ ID NO 7223
LENGTH: 175
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 7223, Application US/11087099
Publication No. US20060041961A1
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Best Local S
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NAME/KEY: unsure
LOCATION: (1)..(175)
OTHER INFORMATION: unsure at all Xaa locations
                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Zea mays
                                                                                                                                                                                                                                                                              Local Similarity
116 GDARNVLCEAVERHGAEMLVVGSHGYGAIKRAVLGSVSDYCAHHAHCTVMIVK 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    132 LVVGNHGYGAIKRAVLGSVSDYCTHHAHCTVMVVK 166
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                                                                                                                                                                      PGKWTMVVGVDESEHSFYALQWALQHFFPAGPAAAVPPSSCVTAKPX------
                                       GPAGPVLVEA--SRDAEMICVGSVGIGRYASSILGSTATELAEKAHCPVAVMR 140
                                                                                                                            AERSLREAQSAVEAAGK-----LVKIETDIPR-----
                                                                                                                                                                                                                PTMKTIIVGIDGSHAAITAALWGVDEAI----SRAVPLRLVSVIKPTHPSPDDYDRDLAH
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GEGKMTM----VVGVDESEHSYYALQWTLLHFFSPGQQQQYRLVVVVTAKPTAASAVGLAGP 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GRGEPTMKTIIVGIDGSHAAITAALWGVDEAIS--RAVPLRLVSV-IKPT------HP
                                                                                    ----AASAVGLAGPXAAADVLPYVEADLKRSALRVVEKAKGLCTQVLASDAVFEALE
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26.0%;
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                                                                                                                                                                                                                                                        ; Score 118.5; DB 7;
; Pred. No. 0.0032;
15; Mismatches 54;
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                                                                                                                                                                                                                                                                                                  Length 175;
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Search completed: March 23, Job time: 6.52731 secs 2006, 06:29:37 밁 S 밁 S

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Minimum
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Maximum Match 100
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Perfect score:
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| Aab66459<br>Adn47126 |           | Aaw55805    | Aaw34204  | Abu33936  | Adr08714  | Adx56098  | Abg29434  | Abu34130  | Abm96092  | Aaw56446 | Abm92782  | Abm91171  | Abo61024  | Abo70760  | Abm96727  | Aag90385  | Abo71865  | Ads15058  |
| Thermococ            | Mycobacte | Streptomy   | Streptomy | Protein e | Human pro | Streptomy | Novel hum | Protein e | M. xanthu | Fragment | M. xanthu | M. xanthu | Klebsiell | Pseudomon | M. xanthu | C glutami | Pseudomon | Pseudomon |

## ALIGNMENTS

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N-PSDB; ADI37352.
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The present invention describes polypeptides or their fragments, which are expressed during the latent stage of a mycobacterial infection, and/or nucleic acids encoding the polypeptides, which are useful for creating a therapeutic vaccine against tuberculosis. Also described: (1 a therapeutic vaccine against tuberculosis comprising one or more polypeptides; (2) a method for treating an animal, including a human being, with tuberculosis caused by virulent mycobacteria, e.g. by Mycobacterium tuberculosis, M. africanum or M. bovis; (3) a method for immunising an animal, including a human being, against tuberculosis

Ξ

Use of one or more polypeptides or their fragments, which are expressed during the latent stage of the mycobacterial infection, and/or nucleic acids encoding the polypeptides, for a therapeutic vaccine against

Claim 3; SEQ ID NO 28; 76pp; English.

tuberculosis.

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ABG77902
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                                             30-JAN-2001; 2001US-0264925P
                                                                         30-JAN-2002;
                                                                                                        08-AUG-2002
                                                                                                                                    WO200261098-A2
                                                                                                                                                                 Synechocystis sp.
                                                                                                                                                                                              High level promoter; Cyanobacterium; sunlight biomaterial.
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05-NOV-2002
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                 DU PONT DE NEMOURS & CO
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RESULT 3
ABM956841
ID ABM95841
AC ABM9
XX ABM9
XX ABM9
XX DT 02-U
XX DT W. XX
DX M. XX
XX XX
XX MYXC
XX MYXC
XX MYXC

ABM96841 standard; protein; 290

Transgenic plant; DNA replication; gene regulation;

gene

expression

protein sequence,

seq id 16040.

(first entry)

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The invention relates to a method for regulating gene expression of a coding region in a Cyanobacterium comprising culturing the transformed Cyanobacterium in the log phase or in the presence of UV-B light, where the promoter region is activated and the coding region is expressed. The method is useful for identification of highly expressed genes or UV responsive genes, and their corresponding promoters. These genes and promoters are useful for constructing expression vectors in Cyanobacteria, green algae or plants and for the production of biomaterials from sunlight. This sequence represents a high level promoter polypeptide of the invention. (Updated on 29-AUG-2003 to standardise OS field)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Regulating gene expression of a coding region in Cyanobacterium, in identifying highly expressed or UV responsive genes and their promoters, comprises culturing the transformed cell in log phase the presence of UV-B light.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 379 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 4;
                                                                                                                                     240
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 115;
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                                                                                                                                                                                                                                                                                                                                           65
                                                                                                                                                                                                                                                                                                                                                                 56 AVMLLASLLAHELAHAVVARRAGVSVESVTLWLFGGVTALGGEAKTPKAAFRIAFAGPAT 115
                                                                                                                                                                                                                                                                                                                                                                                                             11
                                                                                                                                                                                                                                                                                                                                                                                                                                             1 MRDAIPLGRIAG---FVVNVHWSVLVILWLFTWSLATML----PGTVGGYPAVVYWLLGAGG 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                               LATEDIK---
                                                                                                 VALRQLRDVAPSRRSTTSVGDIALPLHSVPTAR-PQEPLTALLERMAPLGPRSRALVTEG
                                                                                                                                   RNAQVKEQMEAFTAEDAVIPNSPIIPAGLNIREFANDYVIGKTPWRRFLVIGADNQLLGV
                                                                                                                                                                   TRISTOOLFAGVRVADAMTAQPHTAPGWINVEDFIQRYVLGER-HSAYPVADRDGSITGL
                                                                                                                                                                                                                                      LWRRHGDSVRAGIGAARAGRVVALVLIALGLAEFVAGGLVGGVWLAFIGWFIFAAAREEE
                                                                                                                                                                                                                                                                                          SLALSATFGALAITLAGVRTPAIV--ISVAWWLATVNLLLGLFNLLPGAPLDGGRLVRAY 173
                                                                                                                                                                                                                                                                                                                                        MNNNIRVGSLFGIPFYVNPSW--FLILGLVTLSYGQDLARFPQLSGGTP----WILGLIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Page 49-50; 86pp;
                              SAVVGIVTPSDVARLIDVYRLAQ 374
                                                                                                                                                                                                                                                                        SLVL----FIGHTIVGTQIPLPVPGQAIIGHIGMINLALAHFNLIPGHPLDGGNVLKSI 179
QSLF-----EVAQLLDQQKLSE 351
                                                                                                                                                                                                      VWQITGNQNKGILIASRVGQGFGWLAIAIGSLGILNILPIGSFWTILIGWFLLQNAGSSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Larossa RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mccluskey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 425.5; DB 5;
Pred. No. 6.9e-32;
70; Mismatches 147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MP.
                                                                 --HVPTSDWPQVTVDSLMQY----PQQMVTVNAN 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 379;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           their
phase or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              useful
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention relates to a substantially purified nucleic acid molecule encoding a nitrite reductase of SEQ ID NO. 11926. Further disclosed is a recombinant DNA construct for expression of a nitrite reductase gene in a plant cell, and a plant cell comprising the recombinant DNA construct. The nucleic acid is useful for determining gene expression, identifying mutations in a gene of interest, and for constructing mutations in a gene of interest, and for constructing mutations in a gene of interest. Sequence given in records for SEQ IDS 9692-16825 represent a group of 7134 Mxyococcus xanthus proteins and peptides. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from USPTO
                  Myxococcus xanthus
                                                Transgenic
                                                                                  3
                                                                                                                                                                              ABM94210 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10-JUL-2000; 2000US-0217883P
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                                                                                                                                                                                                                                                                                                                                                                                                   112
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                                                                                                                                                                                                                                                                                                                                                                                                                                208 VAGGLVGGVW------LAFIGWFIFAAAREEETRISTQQLFAGVRVADAMTAQPHTAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   88 LFGGVTALGGEAKTPKAAFRIAFAGPATSLALSATFGALAITLAGVRTPAIVISVAWWLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2; SEQ ID NO 16040; 25pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MONSANTO TECHNOLOGY
                                                                                                                                                                                                                                                                                              ALPLHSVPTARPQEPLTALLERMAPLGPRSRALVTEGSAVV-GIVTPSDVARLIDVYR 371
                                                                                                                                                                                                                                                                                                                                                                 GWINVEDFI-----QRYVLGERHSAYPVADRDGSITGLVALRQLRDVAPSRRSTTSVGDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TVNLLIGLENLLPGAPLDGGRLVRAYLWRRHGDSVRAGIGAARAGRVVALVLIALGLAEF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MVGGVSELTEAPPRPRDEALMAAVGPLTSILLAVLLGGATWLLQEVRSFNLQFAF-FYMA
                                                                                                                                                                                                                                                                 MVP--AVVVRLDEDGWTA-LRRMAE-EERPQLVVVEADGVLAGTLDVNDVQRGMALYQ
                                                                                                                                                                                                                                                                                                                                AGASLEQALWDLRRARLLL-----LPVTE-DERPVGQVSLETVRAVPDSERMTRTVREV
                                                                                                                                                                                                                                                                                                                                                                                                   -----GVWAVLSLNPFLVVIAFFIFMGAQGEAQQVRMKMTLERVPVADLMTPRRVGVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SLNLFLGVFNLLPAFPMDGGRIVRASLAGRLG-MVRATQVASWLGRGFAVLF------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     in a gene of interest.
                                                plant; DNA
                                                                                protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ŗ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hinkle GJ,
                                                                                                               (first entry)
                                                                                sequence,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12.3%; Score 244; DB 9; L 30.5%; Pred. No. 1.3e-14; tive 48; Mismatches 117;
                                                replication; gene regulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Slater SC,
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                                                                                                                                                                                346 AA
                                                                              веq id 13409.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                gene expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   42;
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                                                                                                                                                                                                                                                                                                                                  217
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RESULT 5
ADN48111
ID ADN4
XX
AC ADN4
AC ADN4
AC ADN4
XX
DT 01-J
XX
DE Ther
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Thermococcus 01-JUL-2004

kodakaraensis (first entry)

KOD1

protein sequence

SeqID1989

ADN48111 standard; protein;

438

330

281 178 222 127 77

230

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Best Local S
Matches 92
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mutations in a gene of interest, and for constructing mutations in a gene of interest. Sequences given in records for SRQ IDS 9692-16825 represent a group of 7134 Mxyococcus xanthus proteins and peptides. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from USPTO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New substantially purified Myxococcus xanthus nucleic acid molecule encoding a nitrite reductase, useful for determining gene expression, identifying mutations in a gene of interest, and for constructing mutations in a gene of interest.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 346 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Example 2; SEQ ID NO 13409; 25pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US6833447-B1.
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                                                                                                                                                                                                                                                                                                                                                                      223
                                                                                                                                                                                                                                                                                                                                                                                                                                                    128
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            117 LALSATFGALA-----ITLAGVRTPAIVISVAWWLATVNLLLGLFNLLPGAPLDG 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           58 MILASILAHELAHAVVARRAGVSVESVTLWLFGGVTALGGEAK-TPKAAFRIAFAGPATS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        92;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MONSANTO TECHNOLOGY LLC
LHTGRLQELASILDSSHARQLSEDTLALISEHAGTV
                                                                                                                                              PGAADADDDLEGPHDPALVGEMLLDNGLPE----LAVGSLQSAFTQAPLARTGHALVLAL
                                                                                                                                                                                                                        --VADRDGSITG----LVALRQLRDVAPSRRSTTSVGDIALPLHSVPTARPQEPL----
                                                                         --TALLERMAPLGPRSR-----
                                                                                                                                                                                                                                                                                                                                                                   WFIFAAAREEETRISTQQLFAGVRVADAMTAQPHTAP-GWINVEDFIQRYVLGERHSAYP
                                                                                                                                                                                                                                                                                                                                                                                                                                                GHLLADLVRARSGYRHERGV-LGVG-----IATAVVVLGLAIW-SKQLWMGMLAMVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GR----LVRAYLWRRHGDSVRAGIGAARAGRVVALVLIALGLAEFVAGGLVGGVWLAFIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FLAGGLIWGLSQLVPLGEPGGLADQGVR-----QFLW----VNIGWGLFNLLPMQPLDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IVFVSVLLHELGHALAFRRYGCPAR-IELHGMGGTTQTHDAAHLTHQQSAFVSFAGPGIG
                                                                                                                                                                                                                                                                                                 VMNLEQLRRTPKRRPAERRFALPR----LVRKPEAAPAGAISIEQLMDEL----RGTPRP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
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27.4%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 174; DB 9; I
Pred. No. 8.6e-08;
37; Mismatches 137;
                                                                     -ALVTEGSAVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wiegand
322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 346;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    70;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CC arbitrary gene in a genome of an organism which comprises providing the component of the genome of such organism, selecting at least component of the genome of such organism, selecting at least component of the sequence, providing a vector that contains a genome of with the selected region and a marker gene, component of a hyperthermostable archaebacterium, particularly component of a hyperthermostable archaebacterium, particularly component of a gene in the genome of an organism, which is applicable in studying gene structure and functions as well as enzyme activities of composed proteins and useful in medicine, forensic science, food or drug inspection, molecular biology and immunology. With this method, the concoded by the genome at an arbitrary position in a genome can be achieved componently and reliably. The present sequence is that of a protein component of the invention. Note: The sequence data for this component of ormat directly from WIPO at the electronic format directly from WIPO at the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the seque
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 9; SEQ ID NO 1989; 598pp; Japanese
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ftp.wipo.int/pub/published_pct_sequences
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                                                                                                                                                                                                                                                                                                        200 LSFSVSVMAIIGTHELGHKIAATYHGVKATMPYFIPFPNILGTLGAVIRVKSPLPTRNAA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
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                                          IGAARAGRVV--ALVLIALGLAEFVAGGLVGGVWLAFIGWFIFAAAREEETRISTQQLFA 243
                                                                                                VLNVQGDYVIFLHPVAIAGW---VGILVTFLNLIPVAQLDGGHILRAFI------
                                                                                                                                                                                                                                                     FRIAFAGPATSLALSATFGALAITLAGVRTPAIV------
                                                                                                                                                                                                                                                                                                                                                                                                           PAGKIPPDNPWLPWLFLVLTVLSTFFAGYYLALNYIATLEHYGLPGLRNPY-----IIA 199
                                                                                                                                                                                                     IDLGVSGPIAGFLV-----AVPVTVLGLKLSVLVPMSMVPSTEGGLYFGTNLLFEALQRL 314
                                                                                                                                                                                                                                                                                                                                                           AGGAVMLLASLLAHELAHAVVARRAGVSVESV-----TLWLFGGVTALGGEAKTPKAA 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                           PLGRIAGFVVNVHWSVLVILWLFTW-----SLATM----LPGTVGGYPAVVYWLLG 52
--SEKAHKMITYAAALLLVGMSYLWSGWLIWAILIIFIGSAGNPGALDEVSPISKGRIVL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       relates to a novel method for targeting disruption
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21.2%;
                                                                                                                                                --ISVAWWLATVNLLLGLENLLPGAPLDGGRLVRAYLWRRHGDSVRAG 185
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The proteins of the present invention have various potential industrial uses, since the proteins are stable at very high temperatures, some up 110 degrees centigrade. Note: This patent is in the same patent family W0200065062, which contains additional sequences as shown in AAB99132-AAB99143, AAH75903-AAH75920 and AAG66436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present invention relates to the genomic sequence of Pyrococcus abyssi (see AAP86431 and AAH41223-7) and P. abyssi proteins. P. abyssi a hyperthermophilic archaeon, which is isolated from deep-sea hydrothermal vents. The present sequence is one such P. abyssi protein.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 7; Page 1083-1084; 1657pp; French.
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Querellou J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hyperthermophilic archaeon; hyperthermophilic protein.
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                                                        297
                                                                                                                                                                                                                                                                         187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         l Similarity
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  VL--IALGLAEFVAGGLVGGVWLAFIGWFIFAAAREEETRISTQQ
                                                                                                        --ISVAWWLATVNLLLGLFNLLPGAPLDGGRLVRAYLWRRHGDSVRAGIGAARAGRVVAL
                                                                                                                                                             LV----AIPVTIIGLKLSAVVPINYLEKGETIYFGSSLLFYGLMKLVLGDLPQNVGIIL
                                                                                                                                                                                                                                                                                                                              HAVVARRAGVSVESVT-----LWLFGGVTALGGEAKTPKAAFRIAFAGPATSL
                                                                                                                                                                                                                                                                                                                                                                                 AGYILST-----LYVTTLEELNLPGIKNTYLNALAFSLG-----IISILGTHEMG
                                                                                                                                                                                                                                                                                                                                                                                                                                      AGEVVNVHWSVLVILWLETWSLATM-LPGTVGGYPAVVYWLLGAGGAVMLLASLLAHELA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       409 AA;
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                                                        HPLAVAGW--
                                                                                                                                                                                                                      ALSATFGALAITLAGVRTPAIV-
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ilarity 20.7%;
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Saurin W, Heilig
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14-MAY-2002; 2002US-0380423P.
16-SEP-2002; 2002US-0410974P.
     ADB80145 standard; protein; 591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 177
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New isolated nucleic acids kandleri proteins, and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Slesarev
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                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
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                                                                                                                                                                         WWLATVNLLLGLFNLLPGAPLDGGRLVRAYLWRRHGDSVRAGIGAARAGRVVALVLIAL
                                                                                                                                                                                                                         PVFLPLGGAFVQHGWTDPDKEVF-İAAAGP-----FGG---ALAGIPLLVİYPKAA
                                                                                                                                                                                                                                                                    VTLWLFGGVTALGGEAKTPKAAFRIAFAGPATSLALSATFGALAITLAGVRTPAIVISVA
                                                                                                                                                                                                                                                                                                                    LGLWKWGTT----AKTGFFSLILHSLIFGPLGVAIVIATLF-HELGHYLACKLLDVPASP
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                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
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                                                                                                                           -NGLIQLFNLLPIPPLDGSKVLRG-LWM---PSPTAWIGVATAVLAAALSLVGI 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein stability enhancement;
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                                                                                                                                                                                                                                                                                                                                                                                                                 19;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              177
                                                                                                                                                                                                                                                                                                                                                                                                               Score 142.5; DB 7;
Pred. No. 3.7e-05;
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New mycobacterial peptide, treating or preventing, or mycobacterial infection.
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mycobacterial
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05-OCT-2001;
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                                                                                                                                                                                                                                                                              130 GFAWWAAALNSLPMLAA--LAWVCADAILLVRTGNHRYAVT----GVLVYLGGLLFFEKA
                                                                                                                                                                                                                                                                                                            45
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                                                                                           GWLVLIAVLALSLVRKRRIGPVWLTAAG---YAVACQVPIFLMRSSPFTALELAQTLRYF 347
                                                                                                                                                                                                                                                                                                                                         VAGAIIRVAPLVWTGPAISLVVLQLLESLALLRALYVISSWRPVLLIPLTFALFTPLAVP 129
ALPLHSVPT-ARPQEPLTALLERMAPLGPRSRALVTEG---SAVVGIVTPSDVARLID--
                                                                                                                       --LVLIALGLAEFVAGGLVGGVWLAFIGWFIFAAAREEETRISTQQLFAGVRVADAMTAQ
                                                                                                                                                       DLSMTWDLLCRSVTHGIVPALAGGPWDWARWAPASPW-----
                                                                                                                                                                                                                  AVIPFVSFAVAALQCHVRGDRSALATVWRAGVRLWTPSLALTVGWVALYLAVVDQRRWSS
                                                                                                                                                                                                                                              AF--RIAFAGPATSLALSATFGALA-ITLAGVR--TPAIVISVAW---WLATV-----
                                                                                                                                                                                                                                                                                                           AVVYWLLGAGGAVMLLASLLAHELAHAVVARRAGVSVESVTLWLFGGVTALGGEAKTPKA 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    591 AA;
                                                           PHTAPGWINVEDFIQRYVLGERHSAYPVADRDGSITGLVALRQLRDVAPSRRSTTSVGDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the invention.
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2001GB-00023993
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                                                                                                                                                                                    -NLLLGLFNLLPGAPLDGGRLVRAYLWRRHGDSVRAGIGAARAGRVVA--
                                -DLV--VVL------ALLAAVALQ----APNRAGTRWLD--
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      de, useful for the manufacture of a medicament
or a diagnostic reagent for identifying,
                                                                                                                                                                                                                                                                                                                                                                                                      49;
                                                                                                                                                                                                                                                                                                                                                                                                                     Score 140; DB 7;
Pred. No. 0.00032;
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Best Local Similarity
Matches 114; Conser
                                                                                                                                                                                                                             aligning the genomic sequence of a first mycobacterium species on a genomic sequence of a second mycobacterium species and selecting a polynucleotide sequence that is highly conserved in both genomes with no counterparts in other bacterial genomic sequences and that corresponds to an essential gene for the survival or virulence of mycobacterium species. The method of the invention is useful for detecting M. tuberculosis or M. leprae infection. The method reduces the number of potential new targets and protective antigens for new drugs and vaccine compositions to treat and prevent mycobacterial disease, particularly tuberculosis and leprosy. The present sequence represents a marker protein from Mycobacterium tuberculosis and Mycobacterium leprae identified using the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Identifying and selecting genes for survival or virulence of mycobacteria by a comparative genomic analysis of the sequences of Mycobacterium tuberculosis and M. leprae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cole
                                                                                                                                                                                     Sequence 649 AA;
                                                                                                                                                                                                                                                                                                                                                                                                        This invention relates to a novel method for identifying essential genes for survival or virulence of mycobacteria species. The method comprises
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                M. tuberculosis and M. leprae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               08-APR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 17;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (INSP)
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                                                                                                                                                                                                                    the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Page 190-192; 874pp; English.
                                                                                                                       Conservative
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Pred. No. 0.00037;
2; Mismatches 172;
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The invention relates to Pseudomonas aeruginosa polypeptides and the polynucleotides encoding them. The sequences are useful in diagnosis and therapy of pathological conditions, as molecular targets for diagnostics, prophylaxis and treatment of pathological conditions resulting from a bacterial infection, for evaluating a compound, such as a polypeptide, for the ability to bind a P. aeruginosa nucleic acid, as components of effective antibacterial targets, as targets for antibacterial drugs, including anti-P. aeruginosa drugs, as templates for recombinant
                                                                                                                                                                                                                                                                                                                                      Novel isolated nucleic acid encoding Pseudomonas aeruginosa polypeptide, useful as molecular targets for diagnostics, prophylaxis and treatment of pathological conditions resulting from bacterial infection.
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                                                                                                                                                                                                                                                                                 Disclosure;
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Best Local :
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06-SEP-2001;
25-OCT-2001;
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                                                                                                                                                                                                                                                                         21-MAR-2002; 2002WO-US009107.
                                                                                                                                                                                                                                                                                                                               03-OCT-2002.
                                                                                                                                                                                                                                                                                                                                                                                     WO200277183-A2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Antisense; prokaryotic essential gene; cell proliferation; drug design
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   encoded by
                                                        ELITRA PHARM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ALVLIALGLAEFVAGGLVGGV------WLAF-----IGWFIFAAAREEETR--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IAFMRRSGEDRATAFF------ASMPGGASEMVNLGQRHG-AVLSRVAAAQSLRLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAIVISVAWWLATVNLLLGLFNLLFGAPLDGGRLVRAYLWRRHGDSVRAGIGAARAGRVV 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ILWLFTWSLATMLPGTVGGYPAVVY-----WLLGAGGAVMLLASLLAHELAHAVVARRAG
  Zamudio C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AELSLTAEALQLSVPLVTALQVLRLLLVLFLAEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RSRALVTEGSAV-VGIVTPSDVARLIDVYRLAQP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SALGCHFNRSFFRSAPAFVSRTLVCTLWMMFAAALAAELLGWLTTLDHQSLMLGMMPGGI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NPWLLGPLLLAAGVSLGFDLHIGLPAGSSGVGQWL------
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LVVLLVPAAFQYLLGGGQPGPHQAAPVDWHWLALLFPAGALVALGW-----QKLRQP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VSVESVTLWLFG-GVTALGGEAKTPKAAFRIAFAGPATSLALSA--TFGALAITLAGVRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VTWRLYW--ATPLVGALGGWLASLVGWPLPWMIGSLLAVWLVRCLADLPLAEVPGARKCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----QWIVGIGI----GLHFTPAVIEQV-----LAHSVIIVFGAVATTLSSVLA
                                                                                                        2001US-00815242.
2001US-00948993.
2001US-0342923P.
2002US-00072851.
2002US-0362699P.
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  Malone C,
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Pred. No. 0.00019;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                essential gene #7868.
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  Haselbeck R,
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     Ohlsen
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     Zyskind JW,
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                                            Yamamoto R,
                                            Forsyth RA,
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antisense nucleic acids, useful for identifying proteins or screening homologous nucleic acids required for cellular proliferation to late candidate molecules for rational drug discovery programs.

Claim ID NO 50265; 1766pp; English

CC (1) a vector comprising a promoter operably linked to the nucleic acid; (2) a host cell containing the vector; (3) an isolated comucleic acid; (2) a host cell containing the vector; (3) an isolated collected acid; (2) a host cell containing the vector; (3) an isolated collected collected collected collected is inhibited by the antisense nucleic acid; (4) an antibody capable of specifically binding compound that inhibited cellular collecteration or the activity of a gene in an operon required for proliferation, or that that an activity against a biological pathway compound that inhibite gene product or that has an activity against a biological pathway in which a proliferation, or that inhibite cellular proliferation; (8) compound is activity; (11) a culture compound that inhibite gene product lies or a gene on which the test compound that inhibite proliferation of an compound is activity; (11) a culture comprising strains in which the gene product is overexpressed or underexpressed; (12) determining the extent compound is a culture or collection of strains; or (13) identifying the target of a compound that inhibite gene collection of confideration of an organism. The antisense nucleic acids are useful for cellular proliferation to isolate candidate molecules for rational confidency proliferation to isolate candidate molecules for rational confidency proliferation in cells other than S. aureus, S. typhimurium, confident did not form part of the printed specification, but was obtained of in electronic format directly from WIPO at The invention relates to an isolated nucleic acid comprising any one the 6213 antisense sequences given in the specification where expres of the nucleic acid inhibits proliferation of a cell. Also included Sequence ftp.wipo.int/pub/published\_pct\_sequences 706 AA; any one expression are:

ð 밁 8 밁 Ş 片 S 밁 S 밁 S Matches 110; Query Match ocal 289 153 180 99 64 LAHEL----Similarity GPGRWFAALAQRDDLARTVLDLRAPRLLCALLAGALLGASGVLMQSIVRNPLAGPEVLGV 466 RGAKASRÍGA--LVPLAALAGGALVLVTDSAVLALGLDATLSTGVALAFVGTPLMLAMIR 346 AKTPKAAFRIAFAGPATSLA---LSATFGALAITLAGVRTPAIVISVAWWLATVNLL---AFIGWFIFAAAREEETR-----RAYLW --- RRHGDSVRAGI-GAARAGR------VVALVLIALGLAEFVAGGLVGGVWL 218 -----LGLFNLLPGAPLDGGRLV-----DAAAAAGVRV----DATRLAGTVVAVGFASVAVSIAG---PLSYIG----LIAPNLIROM 288 LGRIAGEVVNV---HWSVLVILWLETWSLATMLPGTVGGYPAVVYWLLGAGGAVMLLASL 63 RGAAWSGAAQQPAHVRAGTRGGARLVRALAVLPWPAVAVLLLAAGAAVLVVGASFGPVWI VTTLLLAFFEQTVVGASLWASGSLYQPGAAGLRDALLWLVAPLAALPLVIRPLDPLALGD LGLIAAMLVPALAGHASV-PILFVCGLAAAACVSAAAGGWRATPLRLILAGSVCMLLFSA 179 Conservative 7.0%; 22.2%; 48; AHAVVARRAGVSVESVTLWLFGGVTALG------Score 138.5; DB 6 Pred. No. 0.00057; Mismatches 159; 6, Length Indels 179; 706; ......... Gaps ច្ឆ 406 170 152 98 242 239 21

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                                                                                                             Query
Best L
                                                                                                    Matches
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14-MAY-2002;
16-SEP-2002;
                                                                                                                                                                          The invention comprises the amino acid sequence of proteins from the hyperthermophile Methanopyrus kandleri, the invention also comprises the complete genome from Methanopyrus kandleri. The Methanopyrus kandleri proteins of the invention are useful for enhancing the stability and/or activity of other proteins. The Methanopyrus kandleri genome is useful is a variety of diagnostic and analytical methods. The present amino acid sequence represents a Methanopyrus kandleri protein of the invention.
                                                                                                                                                                                                                                                                                                        New isolated nucleic acids kandleri proteins, and the as diagnostic agents.
                                                                                                                                                     Sequence 372
                                                                                                                                                                                                                                                                                Claim 31; SEQ ID NO 981; 1023pp; English.
                                                                                                                                                                                                                                                                                                                                                                                               Slesarev AI,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                04-MAR-2003; 2003WO-US006664
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Methanopyrus kandleri
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protein activity enhancement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hyperthermophile Methanopyrus kandleri protein #981.
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                                                                                                                                                                                                                                                                                                                                                                                                                                      (FIDE-)
                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                           2003-748383/70.
)B; ADM27081.
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92
                         47
                                                34
                                                                          4.
                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                      FIDELITY SYSTEMS INC
                                                                                                                                                                                                                                                                                                                                                                                                                          MALYKH
                         VYWLL-----GAGGAVMLLAS-------LLAHELAHAVVARRAGVSVESVTL
                                                  AMALGRAAG--MKFRYGILYRATRSVGFMDRWLEHTLLGPVLKVSVRASPILGFAGLAFA
                                                                          AIPLGRIAGFVVNVHWSVL------VILWLFTWSLATMLPGTVGGYPAV-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VIGTLWTTLAQWLITQESVQPARFVVWLVGGTYGRSWGEAAALLPWGVLAVPALAL-LAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOGAGLATLATIVAMPLAAHGTIVAASLAGGGATIVITLALNRRHRYAPLA---VALTGI 523
 IYTLVKGASEGSGGFTVLLPGITLPLISGLASLAVILTVHELGHAVAARLSGIRIKRIGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PLDLLALGDEQAAALG 598
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                                                                                                   Conservative
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2002US-0380423P.
2002US-0410974P.
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                                                                                                             6.9%;
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                                                                                                 37;
                                                                                                                                                                                                                                                                                                                    encoding any of about 1700 Methanopyrus encoded proteins, useful as a medicament
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     372
                                                                                                   Score 136.5; DB 7;
Pred. No. 0.00038;
7; Mismatches 75;
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Query Match
Best Local S
Matches 94
                                                                                                                                                                     The present sequence is transmembrane transport protein MMPL3. It is encoded by a gene which is down-regulated during survival under carbon starvation and oxygen limitation conditions. The specification describes mycobacterial genes which are down-regulated during a stationary phase culture of mycobacteria under nutrient-starving culture conditions, when compared with an exponential phase culture of mycobacteria under culture conditions that are not nutrient-starving and that support exponential growth of the mycobacteria. Mycobacterial polypeptides which are down-regulated under nutrient-starving conditions are useful for the manufacture of a medicament for treating or preventing a mycobacterial infection. They may also be useful as vaccines
                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New isolated mycobacterial peptides, useful for the manufacture of medicament for treating or preventing a mycobacterial infection.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Carbon starvation; nutrient-starving cumycobacterial infection; transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABR55194 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (MICR-) MICROBIOLOGICAL RES AUTHORITY.
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ch 6.7%;
l Similarity 24.4%;
94; Conservative 4
                                                                                                                       944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Page 112-115; 138pp;
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                                                                                                                    AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nutrient-starving culture; mycobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hampshire
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   43;
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                           Score 133; DB 6;
Pred. No. 0.0028;
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      Mismatches 152;
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                                                       Length 944;
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RESULT 14
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The invention relates to genes and proteins involved in the biosynthesis of macrolides by microorganisms. In particular it relates to the nucleic acids forming the biosynthetic locus for rosaramicin (a 16-member macrolide antibiotic) from Micromonospora carbonacea. The invention is useful for the biosynthesis of macrolides by microorganisms. It allows direct manipulation of macrolides and related chemical structures by chemical engineering of the proteins involved in the biosynthesis of rosaramicin. It is useful to catalyse certain biochemical reactions, in vitro or in vivo, to direct or enhance the synthesis or modification of a polyketide, polyketide substrate or its precursor. The present sequence
                                                                                                                                                                                                                                                                                                                                                                                                 Novel isolated polypeptide involved in biosynthesis of macrolides by microorganisms, useful for biosynthesis of macrolides by microorganisms, preferably for biosynthesis of rosaramicin.
                                                                                                                                                                                                                                                                                                                                        Claim 13; Page 138-151; 206pp; English.
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N-PSDB; AAD55817.
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07-AUG-2003
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N-PSDB; ADK16023.
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dTDP-vicenisamine; cancer; VinP3;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1120
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                                                                                                                                   7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                standard; protein; 3362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      W-----FIFAAAREEETRISTQQLFAGVRV-ADAMTAQPHTAPGWINVEDFIQRYVLGER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HVVLÅGPAAASTVGLTGGÅDRVÄLIDCDPSDRDALAGLLGAYRPTTIVVAPPAVALTALA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GQAQVWGLGRVAALELPDRWGGLVDLPALTGERAFAQLADVVGGSNGEDQVAVRASGVYG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PQEPLTALLER--MAPLGPRSRALVTEGSAV--VGIVTPSDV--ARLIDVYRLAQPEPTF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ETTPEDFVAAVAAKTTTAVHLDALAAEAELELDAFVVFSSVSGTW-------GGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R---AGRVVALVLIALGLAEFVA-------GGLVG------GVWLAFIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ---VRTPAIVISVAWWLATVNLLLGLFNLLPGAPLDGGRLVRAYLWRRHGDSVRAGIGAA 189
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Pred. No. 0.022;
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New gene clusters encoding a vicenisamine glycosyltransferase polypeptide

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The invention describes a gene cluster comprising a base sequence CC represented by base numbers 1-64492 of a 64492 base pair sequence (SEQ ID CC No. 1) encoding proteins required in the production of antibiotic CC vincenistatin, given in the specification. Also described are the CC vincenistatin, given in the specification acid sequence (SEQ ID No. 1), a base sequence of sequence comprising a 419 amino acid sequence having at least CC 90 % homology with SEQ ID NO: 4, and exhibiting enzymatic activity as a CC glycosyltransferase; a gene encoding a polypeptide of (1); a gene CC comprising a base sequence having at least 90 % homology with the base comprising a base sequence of the dabove, and encoding a polypeptide exhibiting enzymatic activity as a glycosyltransferase, or a gene comprising a base sequence comprising a base sequence cited above under a stringent CC condition, and encoding a polypeptide exhibiting enzymatic activity as a glycosyltransferase, or a gene comprising a base sequence CC represented by a 355, 323, 2260, 3362, 3808, 236, 397, 493, 330, 158, CC 469, 299, 327, 82, 524, 478, 414 or 5836 amino acids (SEQ ID NO: 2-3 or 5 crepresented by a 355, 323, 2260, 3362, 3808, 236, 397, 493, 330, 158, CC 469, 299, 327, 82, 524, 478, 414 or 5836 amino acids (SEQ ID NO: 2-3 or 5 crepresented by a 355, 323, 2260, 3362, 3808, 236, 397, 493, 330, 158, CC 469, 299, 327, 82, 524, 478, 414 or 5836 amino acids (SEQ ID NO: 2-3 or 5 crepresented by a 3553 and producing vicenistatin by catalytic reaction of the glycosyltransferase, comprising the polypeptide of (1), using dTDP-cyclesyltransferase, comprising the polypeptide of (1), using dTDP-cyclesyltransferase, comprising the polypeptide of the treatment of comprising gene of the streatment of the sequence of a polyketide synthase comprising gene of the streatment of the streatment of the streatment of the streatment of the streatment of the streatment of the streatment of the streatment of the streatment of the streatment of the streatment of the streatment of t
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substrate
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743 R 743
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         531 GE----SRAELLAALESLASGVESPGVVTGRVAEGRL--AFLFTGQG-AQRVGMGRELA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         141 SVAWWLATVNLLLGLFNLLPGAPLDG------GRLVRAYLWRRHGDSVRAGIGAARAG 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        416 VDW---SAGAVELLITE--AREWPETGRPRRÄGVSSFGFSGTNAHVIIEBASEFEPSAVEP 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               95 LGGEAKTP------KAAFRIAFAGPATSLALSATFGALAITLAGVRTPAIVI 140
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                                                                           R 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VYWLLGAGGAVMLLASLLAHELAHAVVARRAGVS-----VESVTLWLFGGVTA 94
                                                                                                                                                                                                                                                     VGDIALPLHSVPTARPQEPLTALLERMAPLGPRSRALVTEGSAVVGIVTPSDVARLIDVY 370
                                                                                                                                                                                                                                                                                                                                               ALFRLVESFGVVPDFVAGHSVGEIAAAHVAGVFSLEDAVSLVAARGRIMDALPEGGAMVA 697
                                                                                                                                                                                                                                                                                                                                                                                                                          AQPHTAPGWINVEDFIQRYVLGERHSAY--PVADRDGSITGLVALRQLRDVAPSRRSTTS 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        --AAFPLFAASLEE--TCGLLERAGVA-VREVLFAEEGSAEAALLTRTVYAQAALFAVEV 637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LAGSGVTPPWVLSARSADALRGQAERLLSFVSAAGDVSVVDVAYSLGVSRAGLEHRGVVV 530
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                                                                                                                                                                     --QATEEDVLALLEGVE---DASIAAINGPDAVVVSGTEAGVARVVDVL 742
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; Pred. No. 0.027;
52; Mismatches 153;
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A;COS8-references: UNIPROT:006187; UNIPARC:UPI00000D1035; GB:Z95387; GB:AL123456; NID:g
A;Experimental source: strain H37Rv
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, S.; Connoor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, S. Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, 537-544, 1998

A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G. A;Ittle: Deciphering the biology of Mycobacterium tuberculosis from the complete genome A;Reference number: A70500; MUID:98295987; PMID:9634230
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C;Superfamily: conserved hypothetical protein MJ0392; CBS homology
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hypothetical protein all1844 [imported] - Nostoc sp. (strain PCC 7120)

C;Species: Nostoc sp. PCC 7120

A;Note: Nostoc sp. strain PCC 7120 is a synonym of Anabaena sp. strain PCC 7120

C;Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 09-Jul-2004

C;Accession: AF2036

R;Kaneko, T; Nakamura, Y; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Watanabe, A.; Iriguchi Nakazaki, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabata, Sp. Nakazaki, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabata, Sp. Nakazaki, S.; Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium Anala; Reference number: AB1807; MUID:21595285; PMID:11759840

A;Accession: AF2036

A;Accession: AF2036

A;Accession: AF2036

A;Status: preliminary

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                            R;Kaneko, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Watanabe, A.; Irigu Nakazaki, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabata DNA Res. 8, 205-213, 2001
A;Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium A;Reference number: AB1807; MUID:21595285; PMID:11759840
A;Accession: AE2293
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A;Cross-references: UNIPROT:Q8YVX5; UNIPARC:UPI00000CE21E; GB:BA000019;
A;Experimental source: strain PCC 7120
A;Status: preliminary
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A;Molecule type: DNA
A;Residues: 1-399 <KUR>
A;Residues: 1-399 <KUR>
A;Cross-references: UNIPROT:Q8YQD3; UNIPARC:UPI00000CE945; GB:BA0000019; PIDN:BAB75599.1;
A;Experimental source: strain PCC 7120
C;Genetics:
C;Genetics:
A;Gene: alr3900
C;Superfamily: conserved hypothetical protein MJ0392; CBS homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Judg, K.H.; Alam, M.; Freitas, T. Danson, M.J.; Hough, Jung, K.H.; Alam, M.; Freitas, T. Proc. Natl. Acad. Sci. U.S.A. 97, 12176-12181, 2000 A; Authors: Hou, S.; Daniels, C.J.; Dennis, P.P.; Omer, A.D.; A; Title: Genome sequence of Halobacterium species NRC-1. A; Reference number: A84160; MUID:20504483; PMID:11016950 A; Accession: D84367
                                                                                                                                                                                                                                                                                                                                                                                               A; Gene: VNG2168C
C; Superfamily: conserved hypothetical protein MJ0392; CBS homology
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A;Residues: 1-390 <STO>
A;Cross-references: UNIPROT:Q9HNB6; UNIPARC:UPI0000063A7B; GB:AE004437; NID:g10581585;
C;Genetics:
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Local Similarity 34.1%;
les 120; Conservative 5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               144 WWIATVNILLGGLFNLLEGAPLDGGRLVRAYLWRRHGDSVRAGIGAARAGRVVALVLIALG 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84 VTLWLFGGVTALGGEAKTPKAAFRIAFAGPATSLALSATFGALAITLAGVRTPAIVISVA 143
                                                                                                                                                                                                                                        7 LGRIAGEVVNVHWSVLVIIWLETWSLATMLP---GTVGGYP------AVVYWLL 51
GPATSLALSA-TFGALAITLAGVRTPAIVISVAWWLATVNLLLGLFNLLFGAPLLDGGRLV 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ennedy, S.P.; Mahairas, G.G.; Berq
B.; Keller, K.; Cruz, R.; Danson,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GDLARINLVVALFNLIPGLPLDGGQVLKAALWQITGDRFQAVHWAAKAGQILGYGAIALG
                                                                                  GAAAAVGLFVGVVLHELGHSVVAMRYDFTIDAITLWVLGGVASLTDQPEEWDQELCIALA 125
                                                                                                                                GAGGAVMLLASILAHELAHAVVARRAGVSVESVTLWLFGGVTALGGEAKTPKAAFRIAFA 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TVAESTAIAGVINKLENEQLPRVTVLTPAGAVAGIIDRGDI-----VGALAQ 364
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LWFVILGLATLNFGVAYQEWGTVTAWTAGLIMSLLLFGSVLLHELGHSLAARSQGIKVNS
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                                                                                                                                                                                          IGRVFGIPIKLDVTFLLVLPVFAYLIGTQLEVWVSTLNGAPFAAGLDATALTAGSVRWVL
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Pred. No. 2.5e-27;
                                                                                                                                                                                                                                                                                                                        Score 459; DB 2
Pred. No. 5e-26;
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                                                                                                                                                                                                                                                                                            Mismatches 152;
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R.; Danson, M.J.; Ho
                                                                                                                                                                                                                                                                                                                                                DB 2;
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.G.; Jablor
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A;Cross-references: UNIPROT:Q55518; UNIPARC:UPI0000139A45; EMBL:D64006; A;Note: the nucleotide sequence was submitted to the EMBL Data Library, C;Superfamily: conserved hypothetical protein MJ0392; CBS homology
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76029

Synechotical protein - Synechocystis sp. (strain PCC 6803)

C;Species: Synechocystis sp.

G;Species: 6803

A;Variety: PCC 6803

C;Date: 25-Apr-1997 #sequence_revision 25-Apr-1997 #text_change 09-Jul-2004

C;Accession: S76029
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R;Kaneko, T.; Sato, S.; Kotani, H.; Tanaka, A.; Asamizu, B.; Nakamura, Y.; Miyajima, N.; o, K.; Okumura, S.; Shimpo, S.; Takeuchi, C.; Wada, T.; Watanabe, A.; Yamada, M.; Yasuda DNA Res 3, 109-136, 1996
A;Title: Sequence analysis of the genome of the unicellular cyanobacterium Synechocystis
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Best Local Similarity
Matches 115; Conserv
                                                                                                                                                                                             234
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                                                                                                                                                                                                                                                                                                                                                                                                                           AVMLLASILAHELAHAVVARRAGVSVESVTLWLFGGVTALGGEAKTPKAAFRIAFAGPAT
                                   SAVVGIVTPSDVARLIDVYRLAQ
                                                                                                                                                                                                                                                                                                                  ŚĹVĹ-----FĹGLŤIVĠTQIPLPVPGQAIIGLĹGMINLALALFNLIPĠLPLDĠĠNVLKSI 179
                                                                                                                                                                                                                                                                                                                                                     SLALSATFGALAITLAGVRTPAIV--ISVAWWLATVNLLLGLFNLLPGAPLDGGRLVRAY 173
                                                                                                                                                                                                                                                                                                                                                                                            ALLEASVVAHELGHSLVALAQGIEVKSITLELEGGLASLEKESNTPWQAFAVAIAGPAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MRDAIPLGRIAG--FVVNVHWSVLVILWLFTWSLATML---PGTVGGYPAVVYWLLGAGG
                                                                                                                 VALRQLRDVAPSRRSTTSVGDIALPLHSVPTAR-PQEPLTALLERMAPLGPRSRALVTEG
                                                                                                                                                        RNAQVKEQMEAFTAEDAVIPNSPIIPAGLNIREFANDYVIGKTPWRRFLVIGADNQLLGV
                                                                                                                                                                                             TRISTOQLFAGVRVADAMTAQPHTAPGWINVEDFIQRYVLGER-HSAYPVADRDGSITGL
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llarity 30.0%;
Conservative 7
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Pred. No. 1.3e-23;
70; Mismatches 147;
                                     374
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                                                                              PTSDWPQVTVDSLMQY----
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A;Authors: Utterback, T.; Cotton, M.D.; Spriggs, T.; Artiach, P.; Kaine, B.P.; Sykes, Smith, H.O.; Woese, C.R.; Venter, J.C.
A;Title: The complete genome sequence of the hyperthermophilic, sulfate-reducing archa A;Reference number: A69250; MUID:98049343; PMID:9389475
A;Accession: D69291
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Status: preliminary; nucleic acid sequence not A;Molecule type: DNA A;Residues: 1-362 <KLE>
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Best Local Similarity
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SRSDLMRIKEI
                                   TPSDVARLIDV
                                                                    IGVEPEER----VGNIM--SREVVAVSPNOSAFEAFKIMSEMG-IGRLPVVEHGRVVGIV
                                                                                                                                                                              QQLFAGVRVADAMTAQPHTAPGWINVEDFIQRYVLGERHSAYPVADRDGSITGLVALRQL 298
                                                                                                                                                                                                                  SYAEATKI-AABIGRALAIFMAIF-----
                                                                                                                                                                                                                                                 GDSVRAGIGAARAGRVVALVLIALGLAEFVAGGLVGGVWLAFIGWFIFAAAREEETRIST
                                                                                                                                                                                                                                                                                       ---FGIAVVSALLSSIPVABLSAFFLLFGYLNFILAIFNLIPAFPMDGGRILRSFLAEKR
                                                                                                                                                                                                                                                                                                                        SATEGALAITLAGVRTPAIVISVAWWL-ATVNLLLGLENLLPGAPLDGGRLVRAYLWRRH 178
                                                                                                                                                                                                                                                                                                                                                                                               LASILAHELAHAVVARRAGVSVESVTLWLFGGVTALGGEAKTPKAAFRIAFAGPATSLAL 119
                                                                                                                                                                                                                                                                                                                                                                                                                                    MRASFKIFRVFGIDVEVHISLLILLVLLIYAFSVSPFPYGFANFPLSERIILSSMAAVGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MRDAIPLGRIAGFVVNVHWSVLVILWLFTWSLA-TMLPGTVGGYPAVVXWLLGAGGAVML
                                                                                                        RDVAPSRRSTTSVGDIALPLHSVPTARPQEPLTALLERMAPLGPRSRALVTEGSAVVGIV 358
                                                                                                                                               ENVLGRVRVADVMNTEVVTVTPEMTVSEVID-LILKTKHLGFPVVEGE-RLVGIITLHDI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 418; DB 2;
Pred. No. 4.4e-23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches 162;
                                                                                                                                                                                                                    -GIFTNPWLILIALFVYIGANESERLVLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     shown;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 362
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                                                                                                                                               283
                                                                                                                                                                                                                                                                                          174
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irkness, E.F.
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RESULT A69209

Conserved hypothetical protein MTH816 - Methanobacterium thermoautotrophicum (Species: Methanobacterium thermoautotrophicum (C;Species: Methanobacterium thermoautotrophicum C;Species: Methanobacterium thermoautotrophicum C;Date: 05-Dec-1997 #sequence\_revision 05-Dec-1997 #text\_change 09-Jul-2004 C;Accession: A69209
R;Smith, D.R.; Doucette-Stamm, L.A.; Deloughery, C.; Lee, H.; Dubois, J.; Aldredge, T.; Qiu, D.; Spadafora, R.; Vicaire, R.; Wang, Y.; Wierzbowski, J.; Gibson, R.; Jiwani, Ki, S.; Church, G.M.; Daniels, C.J.; Mao, J.; Rice, P.; Noelling, J.; Reeve, J.N.
J. Bacteriol. 179, 7135-7155, 1997
A;Title: Complete genome sequence of Methanobacterium thermoautotrophicum Delta H: fur A;Reference number: A69000; MUID:98037514; PMID:9371463
A;Accession: A69209
A;Status: preliminary; nucleic acid sequence not shown; translation not shown A;Molecule type: DNA
A;Residues: 1-341 - MTH>
A;Residues: 1-341 - MTH>
A;Residues: 1-341 - MTH>
A;Experimental source: strain Delta H Deli

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C;Genetics:
A;Gene: MTH816
C;Superfamily: cons
F;287-334/Domain: (
                                                                                                                                                                                                                                                                                                                                          C;Accession: H64348

R;Bult, C.J.; White, O.; Olsen, G.J.; Zhou, L.; Fleischmann, R.D.; Sutton, G.G.; Bla)

R; Reich, C.I.; Overbeek, R.; Kirkness, E.F.; Weinstock, K.G.; Merrick, J.M.; Glodek, rson, J.D.; Sadow, P.W.; Hanna, M.C.; Cotton, M.D.; Roberts, K.M.; Hurst, M.A.

Science 273, 1058-1073, 1996

A;Authors: Kaine, B.P.; Borodovsky, M.; Klenk, H.P.; Fraser, C.M.; Smith, H.O.; Woese A;Title: Complete genome sequence of the methanogenic archaeon, Methanococcus jannasc A;Accession: H64348

A;Accession: H64348
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              hypothetical protein homolog MJ0392 - Methanococcus jannaschii
C;Species: Methanococcus jannaschii
C;Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change 09-Jul-2004
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Matches 95
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                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                 MNYSTRLFKIMGIPIELH--ITFILFLVVIIGLSIMNNSI--FWAVLF-------:|LLF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VARLIDV 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VSVVLHELGHSYVAKKYGVKIEKILLLPIGGVAMMD----KIPKEGELRIGIAGPLVSFII
                                                             ASLLAHELAHAVVARRAGVSVESVTLWLFGGVTALGGEAKTPK-AAFRIAFAGPATSLAL 119
                                                                                                                                MRDAIPLGRIAGFVVNVHWSVLVILWLFTWSLATMLPGTVGGYPAVVYWLLGAGGAVMLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SRR-STTSVGDIALPLHSVPTARPQEPLTALLERMAPLGPRSRALVTEGSAVVGIVTPSD 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GVRVADAMTAQPHTAPGWINVEDFIQRYVLGERHSAYPVADRDGSITGLVALRQLRDVAP 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LAHELAHAVVARRAGVSVESVTLWLFGGVTALGGEAKTPKAAFRIAFAGPATSLALSATF
   SATFGALA----ITLAGVRTPAIVISVAWWLATVNLLLGLFNLLPGAPLDGGRLVRAYLW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GVRVADVMTENPVTLHPHMTVKEALD-VMFREKHMGYPVTEA-GELRGIVTFHDISDASR 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VIHELAHSYVALREGVKIKSILLLPIGGVSRMEBIPRIPRQEFMISIAGPLTNI-LMALI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGIGAARAGRVVALVLIALGLAEFVAGGLVGGVWLAFIGWFIFAAAREEETRISTQQLFA
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                                                                                                                                                                  Conservative
                                                                                                                                                             16.5%; Score 328.5; DB 2; Length 24.7%; Pred. No. 1.3e-16; Itive 86; Mismatches 144; Indels
                                                                                                                                                                                                                                hypothetical protein MJ0392; CBS homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19.0%; Score 377.5; DB 2; 30.2%; Pred. No. 3.6e-20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   74; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein MJ0392;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   147;
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                                                                                                                                                                                               Length 339;
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                                                                                                                                                                 59;
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                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                  GB:L77117;
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Best Local
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conserved hypothetical membrane protein SMb20925 [imported] - Si
C;Species: Sinorhizobium meliloti
C;Date: 24-Aug-2001 #sequence_revision 24-Aug-2001 #text_change
                      Accession: H95972
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                                                                                                                                                                                                                                                                GSAVVGIVTPSDVARLIDVYRLAQ
                                                                                                                                                                                                                                                                                                                  GNI-----HKKEGTVRDYM------EKPVVVSEDTDIKEILRKMANTDRVFVVE
                                                                                                                                                                                                                                                                                                                                                             RQLRDVAPSRRSTTSVGDIALPLHSVPTARPQEPL----TALLERMAPLGPRSRALVTE
                                                                                                                                                                                                                                                                                                                                                                                                            VEVETIFKNIKAKDIMTPNPVYVTPDMSIEEFLD-FMLKHKYFGYPVVE-NGKLVGCIGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ISTQQLFAGVRVADAMTAQPHTAPGWINVEDFIQRYVLGERHSAYPVADRDGSITGLVAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KKYGYLKSTKI-AANIGKSLALIMLLFGL
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                                                 09-Jul-2004
Vorholter, F.J.;
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A;Cross-references: UNIPROT:Q92UP7; UNIPARC:UPI00000CB741; GB:AL591985; PIDN:CAC49448.1; A;Experimental source: strain 1021, megaplasmid pSymB R;Galibert, F.; Finan, T.M.; Long, S.R.; Puhler, A.; Abola, P.; Ampe, F.; Barloy-Hubler, pela, D.; Chain, P.; Cowie, A.; Davis, R.W.; Dreano, S.; Federspiel, N.A.; Fisher, R.F.; L.; Hyman, R.W.; Jones, T. Science 293, 668-672, 2001
A;Authors: Kahn, D.; Kahn, M.L.; Kalman, S.; Keating, D.H.; Kiss, E.; Komp, C.; Lelaure, hebault, P.; Vandenbol, M.; Vorholter, F.J.; Weidner, S.; Wells, D.H.; Wong, K.; Yeh, K.C. A;Title: The composite genome of the legume symbiont Sinorhizobium meliloti.
A;Reference number: A96039; MUID:21368234; PMID:11474104 A;Gene: SMb20925
A;Genome: plasmid
C;Superfamily: conserved hypothetical protein MJ0392; CBS homology R;Finan, T.M.; Weidner, S.; Wong, K.; Buhrmester, J.; Chain, P.; Proc. Natl. Acad. Sci. U.S.A. 98, 9889-9894, 2001
A;Title: The complete sequence of the 1,683-kb pSymB megaplasmid A;Reference number: A95842; MUID:21396508; PMID:11481431
A;Accession: H95972 A; Contents: annotation C; Genetics: A;Molecule type: DNA A;Residues: 1-372 <KUR> A; Status: preliminary Genetics: protein SMb20925 [imported] - Sinorhizobium meliloti (str from the N2-fixing endor Hernanc

173 181

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LAIT-----LAGVRTPAIVISVAWWLATVNLLLGLFNLLPGAPLDGGRLVRAYLWRRHGD 180

HEFGHIAAARRFGIKTPDITLLPIGGVARLERMPEEPGQEFVIAIAGPLVNVAIAAVLIA HELAHAVVARRAGVSVESVTLWLFGGVTALGGEAKTPKAAFRIAFAGPATSLALSATFGA 125 IGTIAGTAIRVHVTFALLLIWI--W----LMHYRIGGTPAA---MEGIAFIVAVFVCVVL

SVRAGIGAARAGRVVALVLIALGLAEFVAG--GLVGGVWLAFIGWFIFAAAREEETRIST ILGSSGMEQIAGVEDPQSGFLAR--LAGVNVFLVIFNMIPAFPMDGGRVLRAALASR---

----LTWSRATQIAA--TIGOGLA-FVFGFVGLFYNPLLIFIAIFVYLAATAEAQNAQI

7

Conservative

16.5%;

LGRIAGEVVNVHWS-VLVILWLETWSLATMLPGTVGGYPAVVYWLLGAGGAVMLLASLLA

66; Mismatches 156;

Gaps

57 65 Score 328; DB 2; Pred. No. 1.6e-16;

Length 372; Indels 50;

225

REISGSVMISDVMITEFATLDRSATIDDAIDT-LLATTQREFPVVDAAGHFEGLLTRDDM QQLFAGVRVADAMTAQPHTAPGWINVEDFIQRYVLGERHSAYPVADRDGSITGLVA----

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A;Genome: plasmid
C;Superfamily: conserved hypothetical protein MJ0392; CBS homology
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Science 293, 668-672, 2001
Science 293, 668-672, 2001
A;Authors: Kahn, D.; Kahn, M.L.; Kalman, S.; Keating, D.H.; Kiss, E.; Komp, C. A;Authors: Kahn, D.; Kahn, M.; Vorholter, F.J.; Weidner, S.; Wells, D.H.; Wong, C. A;Title: The composite genome of the legume symbiont Sinorhizobium meliloti. A;Reference number: A96039; MUID:21368234; PMID:11474104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: UNIPROT:Q92Z83; UNIPARC:UPI00000CB150; GB:AE006469; PIDN:AAK65267.1; A;Experimental source: strain 1021, megaplasmid pSymA R;Experimental source: strain 1021, megaplasmid pSymA R;Galibert, F.; Finan, T.M.; Long, S.R.; Puhler, A.; Abola, P.; Ampe, F.; Barloy-Hubler, P;Galibert, F.; Cowie, A.; Davis, R.W.; Dreano, S.; Federspiel, N.A.; Fisher, R.F.; pela, D.; Chain, P.; Cowie, A.; Davis, R.W.; Dreano, S.; Federspiel, N.A.; Fisher, R.F.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R;Barnett, M.J.; Fisher, R.F.; Jones, T.; Komp, C.; Abola, A.P.; Barloy-Hubler, F.; Bows.; Kalman, S.; Keating, D.H.; Palm, C.; Peck, M.C.; Surzycki, R.; Wells, D.H.; Yeh, K.C. Proc. Natl. Acad. Sci. U.S.A. 98, 9883-9888, 2001
A;Title: Nucleotide sequence and predicted functions of the entire Sinorhizobium melilot A;Reference number: A95262; MUID:21396509; PMID:11481432
A;Accession: A95338
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                                             349
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331
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SRSQHPIGIMNYETIGEML
                                                                                                                                                    VA----LRQLRDVAPSRRSTTSVGDIALPLHSVPTARPQEPLTALLERMAPLGPRSRALV
                                                                                                                                                                                                          AQSSELQAI -- SVTVGDVMLTEFGVLQSDARLSEAAE-LLLATSQNEFPVVDGEGQFAGL
                                                                                                                                                                                                                                                           ETRISTOQLFAGVRVADAMTAQPHTAPGWINVEDFIQRYVLGERHSAYPVADRDGSITGL
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                                                                                                                                                                                                                                                                                                                                                                                                                  LLIAVIGGVAGLEQLVRPQDPQIDFFVR--LAGVNIFLVLFNMIPAFPMDGGRVLRAILA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TFGALAITLAGV-----RTPAIVISVAWWLATVNLLLGLFNLLPGAPLDGGRLVRAYL- 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CVVLHEFGHIAAARRFGIKTPDITLLPIGGVARLERNPSEPREELLIÄVÄGPLVNVVIAÄ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SLLAHELAHAVVARRAGVSVESVTLWLFGGVTALGGEAKTPKAAFRIAFAGPATSLALSA 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SLKLGTIAGTEIRIHMTFVLLLVWIWFTHY-----QIGGAPAA--W-EGVAFILSVFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AIPLGRIAGFVVNVHWS-VLVILWL-FTWSLATMLPGTVGGYPAVVYWLLGAGGAVMLLA
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                                                TEGSAVVGIVTPSDVARLI
                                                                                                   LTRDGIIGAMKEGGPN----ALVGTVMRT--DIPWVYEETALGDSLRVMQTTGAPAAAVV
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                                                                                                                                                                                                                                                                                                              -WSLERATRVAA--TIGQGTA-FVMGVAGLFYSPLLILIAIFVYLAAESE
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sporulation protein IVFB related protein, probable metallopeptidase (imported) - C;Species: Clostridium acetobutylicum C;Species: Clostridium acetobutylicum C;Cate: 14-Sep-2001 #sequence_revision 14-Sep-2001 #text_change 09-Jul-2004 C;Accession: E97054 R;Nolling, J; Breton, G; Omelchenko, M.V.; Markarova, K.S.; Zeng, Q.; Gibson, R.; Daly, M.J.; Bennett, G.N.; Koonin, E.V.; Smith, D.R. J. Bacteriol. 183, 4823-4838, 2001 A;Title: Genome Sequence and Comparative Analysis of the Solvent-Producing Bacter A;Reference number: A96900; MUID:21359325; PMID:21359325 A;Accession: E97054
A;Cross-references: UNIPROT:Q97JM1; UNIPARC:UPI00000CA142; A;Experimental source: Clostridium acetobutylicum ATCC824 C;Genetics: A;Gene: CAC1253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Science 273, 1058-1073, 1996
A;Authors: Kaine, B.P.; Borodovsky, M.; Klenk, H.P.; Fraser, C.M.; Smith, H.O.; Woese, A;Title: Complete genome sequence of the methanogenic archaeon, Methanococcus jannasch A;Reference number: A64300; MUID:96337999; PMID:8688087
A;Accession: C64421
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R;Bull, C.J.; White, O.; Olsen, G.J.; Zhou, L.; Fleischmann, R.D.; Sutton, G.G.; Blal
; Reich, C.J.; Overbeek, R.; Kirkness, E.F.; Weinstock, K.G.; Merrick, J.M.; Glodek,
rson, J.D.; Sadow, P.W.; Hanna, M.C.; Cotton, M.D.; Roberts, K.M.; Hurst, M.A.
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C;Species: Methanococcus jannaschii
C;Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change 09-Jul-2004
                                                                                                             A; Molecule type: DNA
A; Residues: 1-284 < KUR>
                                                                                                                                                            A; Status: preliminary
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A;Start codon: TTG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            55 GAVMLLASLLAHELAHAVVARRAGVSVESVTLWL-----FGGVTALGGEAKTPKAAFR-- 107
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1 Similarity 21.4%;
69; Conservation
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIPICVILGE------FMLINIIDMSI-RLLSGTLPKEAAKPVVFLFGDVIPWI---P 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WENFILALFULLPAMPLDG-----FHVWNAFPELLK-----ERKNRFISKVGQILELFIN 341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TVNLLLGLENLLPGAPLDGGRLVRAYLWRRHGDSVRAGIGAARAGRVVALV--LIALGLA 205
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Pred. No. 2.8e-05;
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                                                                                    GB: AE001437;
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                                                                                       PIDN: AAK79224.1;
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Match

.5%;

Score 149.

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BB

2

Length

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RESULT 14
D71142
hypothetical protein PH0351 - Pyrococcus horikoshii
C;Species: Pyrococcus horikoshii
C;Species: Pyrococcus horikoshii
C;Date: 14-Aug-1998 #sequence_revision 14-Aug-1998 #text_change 09-Jul-2004
C;Accession: D71142
R;Kawarabayasi, Y; Sawada, M.; Horikawa, H.; Haikawa, Y.; Hino, Y.; Yamamo'
M.; Ohfuku, Y; Funahashi, T.; Tanaka, T.; Kudoh, Y.; Yamazaki, J.; Kushid
DNA, Res. 5, 55-76, 1998
A;Title: Complete sequence and gene organization of the genome of a hyper-t
*.pefarence number: A71000; MUID:98344137; PMID:9679194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Delecule type: DNA
A;Molecule type: A
A;Residues: 1-493 <KUR>
A;Cross-references: UNIPROT:Q8YV67; UNIPARC:UPI00000CE30E; GB:BA000019; PIDN:BAB73813.1
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hypothetical protein alr2114 [imported] - Nostoc sp. (strain PCC 7120)
hypothes: Nostoc sp. PCC 7120
C;Species: Nostoc sp. strain PCC 7120 is a synonym of Anabaena sp. strain PCC
A;Note: Nostoc sp. strain PCC 7120 is a synonym of Anabaena sp. strain PCC
C;Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 09-Jul-2004
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R;Kaneko, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Wata Nakazaki, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yas DNA Res. 8, 205-213, 2001

A;Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing A;Reference number; AB1807; MUID:21595285; PMID:11759840

A;Accession: AD2070
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                                                                                                                                                                                                                                                                                                                                                                                                                                303
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53; Conservative
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                                                                                                                                                                                                                                                                                                                     GIGAARAGRVVALVLIALGLA 205
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                                                                                                                                                                                                                                                                                                                                                         LGSALQSPLVNVHPLVIIGW----LGLVITALNLMPAGSLDGGRIIQAIYGRKTA----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EAKTPKAAFRIAFAGP----ATSLAL------
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SVKSINMLVVAFFILFCSFKEKGRM 194
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5; Mismatches 8
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, M.; Yasuda,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           52;
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                                                               hyper-thermophilic
                                                                                               Yamamoto,
Kushida, J
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hypothetical protein PAB1063 - Pyrococcus abyssi (strain c)Species: Pyrococcus abyssi
C;Species: Pyrococcus abyssi
C;Date: 20-Aug-1999 #sequence_revision 20-Aug-1999 #text_
C;Accession: B75010
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A;Accession: D71142
A;Status: preliminary; nucleic acid sequence not shown; translation not shown
A;Molecule type: DATA
A;Molecule type: CATA
A;Molecule type: CATA
A;Residues: 1-373 <KAM>
A;Cross-references: UNIPROT:O58089; UNIPARC:UPI0000062DB7; GB:AP000002; NID:g3236129; PII
A;Experimental source: strain OT3
A;Experimental source: strain OT3
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                                                     195 V--ALVLIALGLAEFVAGGLVGGVWLAFIG------
                                                                                                                                                                                                                 143 ILGTHEMGHKIAATLHNVKSTFPYFIPFPSFIGTLGAVIRVKSPIPTRNAAVDLGASGPI
                                                                                                                                                                                                                                                                                                                                                                                   62 SLLAHELAHAVVARRAGVSVE-----SVTLWLFGGVTALGGEAKTPKAAFRIAFAGPA 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               th 7.2%; Similarity 22.0%; 66; Conservative 3
LTYALGFITLGLSYFWPGWLLWGILILLMGRIGNPGALDEVTPLTPGRKALAILIWIIFA
                                                                                                           IILHPLAVAGW----VGILVTFLNLIPAAQLDGGHIARALM------PERAHRI
                                                                                                                                                                                                                                                                       TSLALSATFGALAITLAGVRTPAIV-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PLGRIAGFVVNVHWSVLVILWLFTWSLATM----LPGTVGGYPAVVYWLLGAGGAVMLLA 61
                                                                                                                                                           ----ISVAWWLATVNLLLGLFNLLPGAPLDGGRLVRAYLWRRHGDSVRAGIGAARAGRV 194
                                                                                                                                                                                                                                                                                                                                                                                                                                         PLIGITLFVLTLFSTFFAGYILSSLYVATLNELNLPGIKNVYLNALAFSLG-----IIS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 143.5; DB Pred. No. 0.004; 7; Mismatches
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A,Status: preliminary A,Molecule type: DNA A,Residues: 1-409 <KAW> A;Description: Pyrococcus abyssi genome sequence: A;Reference number: A75001 A;Accession: B75010 A; Experimental source: strain Orsay C; Genetics: A;Cross-references: UNIPROT:Q9UY92; UNIPARC:UPI0000034560; GB:AJ248288; GB:AL096836; Local Similarity PAB1063 140 --ISVAWWLATVNLLLGLENLLPGAPLDGGRLVRAYLWRRHGDSVRAGIGAARAGRVVAL 197 187 HKIAA----SIHNVKSTFPYFIPFPSFIGTLGAVIRVKSPIPTRNAEVDLGVSGPIAGL 142 AGYILST-----LYVTTLEELNLPGIKNTYLNALAFSLG-----IISILGTHEMG 70 HAVVARRAGVSVESVT------LWLFGGVTALGGEAKTPKAAFRIAFAGPATSL 117 ALSATEGALAITLAGVRTPAIV----HPLAVAGW---LV----AIPVTIIGLKLSAVVPINYLEKGETIYFGSSLLFYGLMKLVLGDLPQNVGIIL AGFVVNVHWSVLVILWLFTWSLATM-LPGTVGGYPAVVYWLLGAGGAVMLLASLLAHELA Conservative VGILVTFLNLIPAAQLDGGHVARALL - -7.2%; 20.7%; 47; Score 143; DB 2; Pred. No. 0.0049; Mismatches 83; insights Length 409 Indels into -- PEKAHRVLTY 96; archaeal chromosome Gaps 340 296 139 241 186 69 10, NID

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| Db 341 TIGFLTIGLAYFWPGWILWGILILLMGRVGNPGALDEVSPLTTSR 385 Search completed: March 23, 2006, 05:26:35 Job time : 16.6356 secs | 198 VLIALGLAEFVAGGLVGGVWLAFIGWFIFAAAREEETRISTQQ 240 |

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Y392 METJA
Q92UP7 RHIME
Q6M020 METMP
Q7W044 PROMA
Q5LSX6 SILPO
Q828J6 STRAW
Q5U077 HALMA
Q92081 RHIME
Q675B6 SYMTH
Q7V2E2_PROMP
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029915_ARCFU
07U5H5_SYNPX
064BY8_9ARCH
072J31_THET2
05SI03_THET8
026907_METTH
09RJ56_STRCO
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Q06187 MYCTU
Q06DJC3 SYNEL
Q08YVX5 ANASP
Q08YVX4 METMA
Q08TUQ8 METAC
Q08YQD3 ANASP
Q5UY76 HALMA
Q5UQR6 GLOVI
Q9HYD6 HALMA
Q5UQR6 GLOVI
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O06187 mycobacteri
O8djc3 synechococc
O8yvx5 anabaena sp
O8px44 methanosarc
O8tuq8 methanosarc
O8tuq8 methanosarc
O8yqd3 anabaena sp
O5uy76 haloarcula
O5n076 synechococc
O7nkh6 gloeobacter
O9hh6 halobacteri
O64ddi3 uncultured
O75518 synechococc
O29915 archaeglob
O7u5h5 synechococc
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O92up756 streptomyce
O57837 methanococc
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O6m020 streptomyce
O5038x8 silicibacte
O828j6 streptomyce
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| GALAITL<br>      <br>GALAITL                                    | LAHELAH   | AIPLGRI   | ilarity<br>Conservat                                  | 1; CBS;<br>3; Pept<br>0142; Z<br>teome.<br>93 AA;  | 成の00644<br>第0008915        | e genom Acad. S 43; CAD                                     | EQUENCE<br>2/97;<br>9107; P<br>9107; P<br>Eiglmei<br>thoy S.<br>tkin R.   | Names=M<br>m bovis<br>tinobac<br>ineae;<br>m tuber<br>765;   | 03 (TremBirel. 25, Creat<br>03 (TremBirel. 25, Last<br>04 (TremBirel. 26, Last<br>CONSERVED TRANSMEMERANE | PRELIM                    |            | 7.5567<br>7.5567  |  |
| AGVRTP <i>I</i><br>       <br>AGVRTP <i>I</i>                   | AGFVVN<br>AVVARRJ<br>   | AGFVVNI<br>   | 100.0<br>100.0<br>ative                               | idase N<br>INC_PRO   | roteoly; CBS.              | e seque   | ubMed=:<br>er K.,<br>Grone, Dogge   | b2658c;<br>teria;<br>Mycobac<br>culosi   | rel. 29<br>rel. 29<br>rel. 20<br>TRANSMI  | INARY;                    |            | 368 2<br>224 2<br>607 2<br>436 2<br>222 2<br>203 2<br>360 2<br>365 2  | 8 9 5 5 6 6 3<br>9 5 5 6 6 3   |
| .IVISVAWWLATVNLL<br>            <br>.IVISVAWWLATVNLL            | GVSVESVTLWLFGGV   | HWSVLVILWLFTWSL   | 0%; Score 1990;<br>0%; Pred. No. 6.5<br>0; Mismatches | Pfam; PF00571; CBS; 1. Pfam; PF005715; CBS; 1. Pfam; PF02163; Peptidase M50; 1. PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN_1 Complete proteome. SEQUENCE 393 AA; 41480 MW; 6790E021215 | rais and peptido dase_M50. | nce of Mycobacter 100:7877-7882 100:7877-7882 100:7877-7882 | bMed=12788972; DOI=10.1073/pnas.113<br>r K., Camus JC., Medina N., Manso<br>Grondin S., Lacroix C., Monsempe C<br>Doggett J., Mayes R., Keating L.,<br>B.G., Cole S.T., Gordon S.V., Hewi | ;<br>Actinobacteridae; /<br>Cteriaceae; Mycobact<br>s complex.   | Creat<br>Last<br>Last<br>RANE   | PRT; 393                  | ALIGNMENTS | Q8TU31_METAC Q6N4M2_RHOPA Q8TK16_METAC Q5JGJB_PYRKO Q4NPU5_9DELT Q6L2Q8_PICTO Q7MEB6_VIBVY Q97JM1_CLOAB Q63DT5_BACCZ            |  |
| ATFGALAITLAGVRTPAIVISVAMWLATVNLLLGLFNLLPGAPLDGGRLVRAYLWRRHG<br> | KUAL PIGKLAGE VNNVHWSVIVILMEETWSIAIMIEG IVGGIERVVIMIDGAGGAVNI<br>SLLAHELAHAVVARRAGVSVESVTLWLEGGVTALGGEAKTPKAAFRIAFAGPATSLAL<br> | MRDAIPLGRIAGEVVNVHWSVLVILMLETWSLATMLPGTVGGYPAVVYWLLGAGGAVML<br> | DB 2; Length 39<br>.5e-130;<br>s 0; Indels            | 1.<br>5B6F98 CRC64;  | sis; I                     | erium bovis.";<br>82(2003).<br>A.                           | .1073/pnas.1130426<br>dina N., Mansoor H<br>C., Monsempe C., S<br>C., Keating L., Whee  | e; Actinomycetales<br>bacterium;   | ed) sequence update) annotation update) ALANINE AND LEUCINE RICH  | AA.                       |            | Q8tu31<br>Q6n4m2<br>Q8tk16<br>Q8tk16<br>Q5jgj8<br>Q4npu5<br>Q612q8<br>Q7meb6<br>Q97jm1<br>Q63dt5                                | Q7njv<br>Q7uit<br>Q5838<br>Q4na<br>Q4nvi<br>Q4nvi                          |
| VRAYLWRRHGD 180   | S—S 1   | LLGAGGAVMLL 60  | 93;<br>0; Gaps 0;                                     |  |                            | ;   | 30426100;<br>cor H.;<br>C., Simon S.,<br>Wheeler P.R.,<br>inson R.G.;   | <b>30</b>  |   |                           |            | al methanosarc rhodopseudo fe methanosarc ge pyrococcus us anaeromyxob ge picrophilus b6 vibrio vuln clostridium ts bacillus ce | w8 gloeobacter t4 rhodopirell 81 methanococc j8 arthrobacte 60 anaeromyxob |

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STRAIN=CDC 1551 / Oshkosh;

MEDLINE=22206494; PubMed=12218036;

MEDLINE=22206494; PubMed=12218036;

DOI=10.1128/JB.184.19.5479-5490.2002;

Pleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O.,

Pleischmann R.D., DeBoy R.T., Dodson R.J., Gwinn M.L., Haft D.H.,

Peterson J.D., DeBoy R.T., Dodson R.J., Gwinn M.L., Ermolaeva M.D.,

Hickey E.K., Kolonay J.F., Nelson W.C., Umayam L.A., Ermolaeva M.D.,

Salzberg S.L., Delcher A., Utterback T.R., Weidman J.F., Khouri H.M.,

Gill J., Mikula A., Bishai W., Jacobs W.R. Jr., Venter J.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=88295987; PubMed=9634230; DOI=10.1038/31159; Cole S.T., Brosch R., Parkhill J., Garnier T., Churcher C.M., Harris D.E., Gordon S.V., Eiglmeier K., Gass S., Barry C.E. III, Tekaia F., Badcock K., Basham D., Brown D., Chillingworth T., Connor R., Davies R.M., Devlin K., Feltwell T., Gentles S., Hamlin Holroyd S., Hornsby T., Jagels K., Krogh A., McLean J., Moule S., Murphy L.D., Oliver S., Osborne J., Quail M.A., Rajandream M.A., Rogers J., Rutter S., Seger K., Skelton S., Squares R., Sulston J.E., Taylor K., Whitehead S., Barrell B.G.; "Deciphering the biology of Mycobacterium tuberculosis from the complete genome sequence."; Nature 393:537-544(1998).
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O1.JUL-1997 (TEMBLrel. 04, Created)
O1.JUL-1997 (TEMBLrel. 04, Last sequence update)
O1.JUL-1997 (TEMBLrel. 31, Last annotation updat
13.SEP-2005 (TEMBLrel. 31, Last annotation updat
PROBABLE CONSERVED TRANSMEMBRANE ALANINE AND LEUC
(Hypothetical protein).
OrderedLocusNames=MT2700, Rv2625c;
Mycobacterium tuberculosis.
             InterPro; IPRO00644; CBS.
InterPro; IPRO08915; Peptidase_M50.
InterPro; IPRO06025; Pept_M_Zn_BS.
Pfam; PF00571; CBS; 1.
Pfam; PF02163; Peptidase_M50; 1.
                                                                                                                                        laboratory strains.";

J. Bacteriol. 184:5479-5490(2002).

BMBL; B8842580; CAB08617:1; -; Genomic_DNA.

EMBL; AE000516; AAK47016.1; -; Genomic_DNA.

PIR; H70572; H70572.

TIGR; MT2700; -
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006187; Q7D6V5;
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Corynebacterineae; Mycobacteriaceae; Mycobacterium;
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                                                                                        erculist; Rv2625c; -.
GO:0004222; F:metalloendopeptidase activity; IE
GO:0006508; P:proteolysis and peptidolysis; IEA
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Pfam, PF00571; CBS; 1.
Pfam; PF02163; Peptidase\_M50; 1.
SMART; SM00116; CBS; 1.
PROSITE; PS00142; ZINC\_PROTEASE;

proteome

ZINC\_PROTEASE; UNKNOWN\_1.

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45373 MW;

7C192803184EDA68 CRC64;

InterPro; IPR008915; Peptidase\_M50. InterPro; IPR006025; Pept\_M\_Zn\_BS.

InterPro; IPR000644; CBS.

EMBL; BA000039; BAC08856.1; -; Genomic\_DNA GO; GO:0004222; F:metalloendopeptidase act: GO; GO:0006508; P:proteolysis and peptidol:

idase activity; peptidolysis;

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Complete
SEQUENCE
                                                                                                                                                                                                                                                                                                                                      MEDLINE=2225144; PubMed=12240834;
Makamura Y., Kaneko T., Sato S., Ikeuchi M., Katoh H., Sasa Watanabe A., Iriguchi M., Kawashima K., Kimura T., Kishida Kiyokawa C., Kohara M., Matsumoto M., Matsuno A., Nakazaki Shimpo S., Sugimoto M., Takeuchi C., Yamada M., Tabata S.; "Complete genome structure of the thermophilic cyanobacteri Thermosynechococcus elongatus BP-1.";
DNA Res. 9:123-130(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synechococcus elongatus (Thermosynechococcus elongatus).
Bacteria; Cyanobacteria; Chroococcales; Synechococcus.
NCBI_TaxID=32046;
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OrderedLocusNames=tll1304;
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01-MAR-2003 (TrEMBLrel. 23,
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"Complete genomic sequence of the filamentous nitrogen-fixing Cyanobacterium Anabaena sp. strain PCC 7120.";

DNA Res. 8:205-213(2001).

EMBL; BA000019; BAB73543.1; -; Genomic_DNA.

PIR; AF2036; AF2036.

GO: GO:0004222; F:metalloendopeptidase activity; IEA.

GO; GO:0006508; P:proteolysis and peptidolysis; IEA.

InterPro; IPR000644; CBS.
InterPro; IPR000915; Peptidase M50.

InterPro; IPR000915; Peptidase M50.

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Anabaena sp. (strain PCC 7120).
Bacteria; Cyanobacteria; Nostocales;
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Kaneko T., Nakamura Y., Wolk C., Kuritz T., Sasamoto S.,
Watenabe A., Iriguchi M., Ishikawa A., Kawashima K., Kimura T.,
Kishida Y., Kohara M., Matsumoto M., Matsuno A., Muraki A.,
Kishida Y., Kohara M., Shimpo S., Sugimoto M., Takazawa M., Yamada M.,
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30.7%; Pr
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Score 486.5; DB 2;
Pred. No. 1.3e-25;
8; Mismatches 169;
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                                                                 Query Match
Best Local Similarity
Matches 121; Conser
                                                                                                                                                                                                Complete proteome. sequence 364 AA;
                                                                                                                                                                                                                                                                                                 Pfam; PF00571; CBS; 1.
Pfam; PF02163; Peptidase_M50; 1.
SMART; SM00116; CBS; 2.
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01-OCT-2002 (TrEMBLrel. 22,
01-MAR-2004 (TrEMBLrel. 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Fritz H.-J., Gottschalk G.;
"The genome of Methanosarcina mazei:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OrderedLocusNames=MM1318;
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                                                                                                                                                                                                                                                                  PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN_1.
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      MRDAIPLGRIAGFVVNVHWSVLVILWLFTWSLATMLPGTVGGY-----PAVVYWLLG
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                                                                    Conservative
                                                                                                24.4%;
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transfer between Bacteria and Archaea.";
J. Mol. Microbiol. Biotechnol. 4:453-461(2002).
EMBL; AE013364; AAM31014.1; -; Genomic DNA.
GO; GO:0004222; F:metalloendopeptidase activity;
GO; GO:0006508; P:proteolysis and peptidolysis; I
InterPro; IPR000644; CBS.
InterPro; IPR008915; Peptidase M50.
InterPro; IPR008025; Pept_M_Zn_BS.
Pfam; PP00571: CRS: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Deppenmeier U., Johann A., Hartsch T., Merkl R., Schmitz R. Martinez-Arias R., Henne A., Wiezer A., Baeumer S., Jacobi Brueggemann H., Lienard T., Christmann A., Boemecke M., Ste Bhattacharyya A., Lykidis A., Overbeek R., Klenk H.-P., Gur Fritz H.-J., Gottschalk G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN=Goe1 / Go1 / ATCC BAA-199 / DSM 3647 / OCM MEDLINE=22120827; PubMed=12125824;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Methanosarcina mazei (Methanosarcina frisia).
Archaea; Euryarchaeota; Methanomicrobia; Methanosarcinales;
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                                                                                                                    40168 MW; 80E1ADA5173A9CD9 CRC64;
Score 485; DB 2; 1
Pred. No. 1.5e-25;
5; Mismatches 136;
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                                                     Length 364;
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RC STRAIN-C2A / ATCC 35395 / DSM 2834;

RA MEDLINE-21929760; pubMedc11932238; DOI=10.1101/gr.223902;

RA Galagan J.E., Nusbaum C., Roy A., Endrizzi M.G., Macdonald P.,

RA Galagan J.E., Nusbaum C., Roy A., Endrizzi M.G., Macdonald P.,

RA FILHUGh W., Calvo S., Engels R., Smirnov S., Atnoor D., Brown A.,

RA Allen N., Naylor J., Stange-Thomann N., DeArellano K., Johnson R.,

RA Linton L., McEwan P., McKernan K., Talamas J., Tirrell A., Ye W.,

RA Linton L., McEwan P., McKernan K., Talamas J., Tirrell A., Ye W.,

RA Linton L., McEwan P., McKernan K., Talamas J., Tirrell A., Ye W.,

RA Linton L., McEwan P., McKernan K., Grahame D.E., Grahame D.A., Guss A.M.,

RA Hedderich R., Ingram-Smith C., Kuettner H.C., Krzycki J.A.,

RA Hedderich R., Liu J., Mukhopadhyay B., Reeve J.N., Smith K.,

RA Perry J.G., Jarrell K.F., Jing H., Macario A.J.L., Paulsen I.T.,

RA Pricchett M., Sowers K.R., Swanson R.V., Zinder S.H., Lander E.,

RA Pricchett M., Sowers K.R., Swanson R.V., Zinder S.H., Lander E.,

RA Mctcalf M.W., Birren B.;

RT mod physiological diversity.";

The genome of Methanosarcina acetivorans reveals extensive metabolic and physiological diversity.";
Query Match
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QBTUQB;
                                                                                                                             PROSITE;
                                                                                                                                                              SMART; SM00116; CBS;
                                                                                                                                                                                  InterPro; IPR008915; Peptidase_M50.
InterPro; IPR006025; Pept_M_Zn_BS.
Pfam; PF00571; CBS; 1.
Pfam; PF02163; Peptidase_M50; 1.
                                                                                                                                                                                                                                                                                                                                                 Genome Res. 12:532-542(2002).

EMBL; AE010557; AAM03461.1; -; Genomic_DNA.

GO; GO:0004222; F:metalloendopeptidase accivity; IEA.

GO; GO:0006508; P:proteolysis and peptidolysis; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Methanosarcina acetivorans.
Archaea; Euryarchaeota; Methanomicrobia; Methanosarcinales;
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01-JUN-2002 (TrEMBLrel. 21, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last annotation updat:
Hypothetical protein MA0007.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUCLEOTIDE SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Methanosarcinaceae; Methanosarcina.
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                                                                                                                          PS00142; ZINC_PROTEASE; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GRVLVIDNGSLVGVLSRTDLVRIL 359
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FAAAREEETRISTQQLFAGVRVADAMTAQPHTAPGWINVEDFIQRYVLGERHSAYPVADR
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                                                                                                                                                                                                                                                                                                                       IPR000644; CBS.
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                                                                  39671 MW;
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   Score 485;
                                                                  F902D75383436134 CRC64;
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            Query Match
Best Local
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                                                     Complete
SEQUENCE
                                                                                                                                                                                                                                                                     Watanabe A., Iriguchi M., Ishikawa A., Kawashima K., Kimura T., Kishida Y., Kohara M., Matsumoto M., Matsuno A., Muraki A., Nakazaki N., Shimpo S., Sugimoto M., Takazawa M., Yamada M., Yasuda M., Tabata S.;
                                                                                                                                                                                                                                                                                                                                                                                                OrderedLocusNames=alr3900;
Anabaena sp. (strain PCC 7120).
Bacteria; Cyanobacteria; Nostocales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-MAR-2002 (TrEMBLrel.
01-MAR-2002 (TrEMBLrel.
01-MAR-2004 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 )3_ANASP
Q8YQD3_ANASP PRELIMINARY;
Q8YQD3;
01-MAR-2002 (TrEMBLrel. 2)
                                                                                            Pfam; PF00571; CBS; 1.
Pfam; PF02163; Peptidase_M50; 1.
SMART; SM00116; CBS; 1.
                                                                                                                                                                                                                                          cyanobacterium Anabaena sp. strain PCC
                                                                                                                                                                                                                                                                                                                             MEDLINE=21595285; PubMed=11759840; Kaneko T., Nakamura Y., Wolk C.P.,
                                                                                                                                 InterPro; IPR008915; Peptidase_M50.
InterPro; IPR006025; Pept_M_Zn_BS.
                                                                                                                                                InterPro; IPR000644; CBS.
InterPro; IPR008915; Pept
                                                                                                                                                                           GO; GO:0004222; F:metalloendopeptidase GO; GO:0006508; P:proteolysis and pepti
                                                                                                                                                                                                        EMBL; BA000019; BAB75599.1; -; Genomic_DNA PIR; AE2293; AE2293.
                                                                                                                                                                                                                                  DNA Res. 8:205-213(2001)
                                                                                                                                                                                                                                              "Complete genomic sequence of the filamentous nitrogen-fixing cyanobacterium Anabaena sp. strain PCC 7120.";
                                                                                                                                                                                                                                                                                                                                                          NUCLEOTIDE SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=103690;
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                                                                                PROSITE;
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 120;
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              Similarity
                                                    proteome.
399 AA;
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                                                                                PS00142;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNGELVGVLSRTDLVRTL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LVALROLRDVAPSRRSTTSVGDI-ALPLHSVPT-ARPQEPLTALLERMAPLGPRSRALVT 349
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  I----GGVCLLIYGYIIAPNSALSANPVFLTIWILGAMNIILGIFNLLPAFPMDGGRVLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LFASILVHELAHSYLAMRYGVNIBSITLFLFGGVSSMEEMPRDPGQEAKWASAGPLTSLL
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Conservative
                                                                            ZINC_PROTEASE; UNKNOWN_1.
                                                     43105 MW; EC3C4E458F8F200D CRC64;
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              34.1%;
                          24.0%;
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59;
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Last sequence update)
Last annotation update)
              Score 477; DB 2;
Pred. No. 6.1e-25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred.
 Mismatches 163;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                           idase activity; peptidolysis;
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smatches 149;
                                                                                                                                                                                                                                                                                                                                Kuritz T.,
                                                                                                                                                                                                                                                                                                                                                                                                 Nostocaceae; Nostoc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             399
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                         Length 399;
  Indels
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Matches 137
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Pfam, PF02163; Peptidase_M50; 1.
SMART; SM00116; CBS; 2.
                                                                                                                                                                                                                                                                     PROSITE; PS00142; ZINC PROTEASE; UNKNOWN 1.
Complete proteome; Hypothetical protein.
SEQUENCE 418 AA; 45115 MW; 2C6256D1E2C2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Genome Res. 14:2221-2234(2004).
EMBL; AY596297; AAV47518.1; -; Genomic_DNA.
GO; GO:0004222; F:metalloendopeptidase activity.
GO; GO:0006598; P:proteolysis and peptidolysis;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN=ATCC 43049;
PubMed=15520287; DOI=10.1101/gr.2700304;
Baliga N.S., Bonneau R., Facciotti M.T., Pan M., Glusman Beliga N.S., Bannon P., Chiu Y., Weng R.S., Gan R.R., H Date S.V., Marcotte E., Hood L., Ng W.V.;
"Genome sequence of Haloarcula marismortui: a halophilic "Cenome sequence of Haloarcula marismortui: a halophilic"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Haloarcula marismortui (Halobacterium marismortui).
Archaea; Euryarchaeota; Halobacteria; Halobacteriales;
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OrderedLocusNames=rrnAC2755;
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InterPro; IPR008915; Peptidase_M50.
InterPro; IPR006025; Pept_M_Zn_BS.
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                                        AGGAVMLLASLLAHELAHAVVARRAGVSVESVTLWLFGGVTALGGEAKTPKAAFRIAFAG
                                                                                                                                    LGRIAGEVVNVHWSVLVILWLETWSLAT-----MLPGTVGG-----YPAVVYWLLG
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  IGAALGLFTGVVLHELGHSLVAIRYGFPIDSITLWLFGGIAQLSEMPEDWKQELVIAIAG
                                                                                           I GSAFGI PIQLDLTFLLVLPLFAWI I GTQI EQTTELLNGTLNAGLDVAVLTDGALVWVLG
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                                                                                                                                                                               Score 474.5; DB 2;
Pred. No. 9.5e-25;
5; Mismatches 160;
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RESULT 9
QSNOR6 SYNP6 PRELIMINARY;
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AC QSNOR6;
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DT 01-FEB-2005 (TrEMBLrel. 29,
DE Hypothetical protein.
GN OrderedLocusNames=syc1914_d
GN Synechococcus sp. (etrain P
OC Bacteria; Cyanobacteria; Ch
OX NCBI TaxID=269084;
RN [1]
RA NUCLEOTIDE SEQUENCE.
RC STRALN=PCC6301;
RA Sugita M.;
RY "Complete genome structure
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DR GO; GO:0006508; P:proteolys
DR GO:0006508; P:proteolys
DR InterPro; IPR008015; Peptid
DR InterPro; IPR008015; Peptid
DR InterPro; IPR008025; Peptid
DR Pfam; PF00571; CBS; 1.
DR Pfam; PF00571; CBS; 1.
DR Pfam; PF00163; Peptidase M5
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DR Pfam; Pf00164; Pf07
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Best Local Similarity
Matches 113; Conserv
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Pfam; PF02163; Peptidase M50; 1.
PROSITE; PS00142; ZIMC_PROTEASE; UNKNOWN_1.
Complete proteome; Hypothetical protein.
SEQUENCE 381 AA; 41197 MW; 7341790A361BECEF CRC64;
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OrderedLocusNames=syc1914_d;
Synechococcus sp. (strain PCC 6301) (Anacystis nidulans).
Bacteria; Cyanobacteria; Chroococcales; Synechococcus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; AP008231; BAD80104.1; -; Genomic_DNA. GO; GO:0004222; F:metalloendopeptidase acti GO; GO:0006508; P:proteolysis and peptidoly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Complete genome structure of the unicellular cyanobacterium nidulans 6301 (Synechococcus sp. PCC6301)."; Submitted (DEC-2004) to the EMBL/GenBank/DDBJ databases.
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   HTAPGWINVEDFIQRYVLGERHS-AYPVADRDGSITGLVALRQLRDVAPSRRSTTSVGDI
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                                                                                                                                                                                                                                     ------LATVNILLGLFNLLPGAPLDGGRLVRAYLWRRHGDSVRAGIGAARAGRVVA 196
                                                                                                                                                                                                                                                                                                                                                                                         FGGVTALGGEAKTPKAAFRIAFAGPATSLALSATFGALAITLAGVRTPAIVISVAWW--- 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TWSLATMLPGTVGGYPAVVYWLLGAGGAVMLLASLLAHELAHAVVARRAGVSVESVTLWL
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IPR006025; Pept_M_Zn_BS.
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GO; GO:0004222; F:metalloendopeptidase activity; IE.

GO; GO:0006508; P:proteolysis and peptidolysis; IEA

InterPro; IPR006044; CBS.

InterPro; IPR006915; Peptidase_M50.

InterPro; IPR006025; Peptidase_M50.

Pfam; PF00571; CBS; 1.

Pfam; PF02163; Peptidase_M50; 1.

PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN_1.
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                                                                              ALLROPTEI ----WAITPVSAVMQPVDASETVAADQPLDEVLTRLQEKRLPRIPVLQPSG
                                                                                                                            -ALROLRDVAPSRRSTTSVGDIALPLHSVPTARPQEPLTALLERMAPLG-PRSRALVTEG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ng W.V., Kennedy S.P., Mahairas G.G., Berquist B., Pan M., Shukla H.D., Lasky S.R., Baliga N.S., Thorsson V., Sbrogna J., Swartzell S., Weir D., Hall J., Dahl T.A., Welti R., Goo Y.A., Leithauser B., Keller K., Cruz R., Danson M.J., Hough D.W., Maddocks D.G., Jablonski P.E., Krebs M.P., Angevine C.M., Dale H., Isenbarger T.A., Peck R.F., Pohlschroder M., Spudich J.L., Jung K., Alam M., Freitas T., Hou S., Daniels C.J., Dennis P.P., Omer A.D., Ebhardt H., Lowe T.M., Lidang P., Riley M., Hood L., DasSarma S.; "Genome sequence of Halobacterium species NRC-1."; "Froc. Natl. Acad. Sci. U.S.A. 97:12176-12181 (2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00571; CBS; 1.
Pfam; PF02163; Peptidase_M50; 1.
SMART; SM00116; CBS; 2.
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Halobacterium salinarium (Halobacterium halobium).
Archaea; Euryarchaeota; Halobacteria; Halobacteriales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN_1.

Complete proteome.

SEQUENCE 390 AA; 41033 MW; BEF392BE0B88F0CE CRC64;
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STRAIN=NRC-1 / ATCC
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Q9HNB6;
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InterPro; IPR008915; Peptidase_M50.
InterPro; IPR006025; Pept_M_Zn_BS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GO; GO:0004222; F:metalloendopeptidase activity; GO; GO:0006508; P:proteolysis and peptidolysis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Proc. Natl. Acad. Sci. U.S.A. 97:12176-1216
EMBL; AE005104; AAG20304.1; -; Genomic_DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=20504483;
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                                                                                                                                                            GEAQRTAMNAAFEGVTVADVMTPASDVHTVAATASVADLMDS-MLEHRHTGYPVF-RDAT
                                                                                                                                                                                                                                                                                                                                                                     GPAVSVALAAVAYGVLAVLPSSLDTVRFVFG---YLALMNLALAAFNLLPGFPMDGGRVL
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        LVTEGSA-VVGIVTPSDVARLIDVYRLAQ
                                                        AVGMVTLDDARSVRAVERDAMRVADVMSDDVYTIPGSADATDALDALQEHSV----
                                                                                                            ITGLVALRQLRDVAPSRRSTTSVGDI-ALPLHSVP-TARPQEPLTALLERMAPLGPRSRA 346
                                                                                                                                                                                                                                                                RALLARTR-TFARATKIAAEVGKLFAFVLGIAGLLSF-----NVILIGVAFFIYIGAA
                                                                                                                                                                                                                                                                                                                 RAYLWRRHGDSVRAGIGAARAGRVVALVLIALGLAEFVAGGLVGGVWLAFIGWFIFAAAR
                                                                                                                                                                                                          EESTRISTQQLFAGVRVADAMT--AQPHTAPGWINVEDFIQRYVLGERHSAYPVADRDGS 288
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CC 700922 / JCM 11081;
PubMed=11016950; DOI=10.1073/pnas.190337797;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23.1%;
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Last sequence update)
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Pred. No. 1.1e-23;
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RESULT 12
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InterPro; IPR008915; Peptidase M50.
InterPro; IPR006025; Pepti M_Zn_BS.
Pfam; PF00571; CBS; 1.
Pfam; PF02163; Peptidase_M50; 1.
SMART; SM00116; CBS; 2.
PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN_1.
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Putnam N., Detter J.C., Richardson P.M., Rokhsar D.;
Putnam N., Detter J.C., Richardson P.M., Rokhsar D.;
Submitted (AUG-2004) to the EMBL/GenBank/DDBJ databases.
EMBL; AY714826; AAUB2544.1; -; Genomic DNA.
GO; GO:0004222; F:metalloendopeptidase activity; IEA.
GO; GO:0006233; F:peptidase activity; IEA.
GO; GO:0006238; P:protecolysis and peptidolysis; IEA.
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PubMed=15353801; DOI=10.1126/science.1100025;

Hallam S.J. Putnam N., Preston C.M., Detter J.C., Rokhsar D.,
Richardson P.M., DeLong E.F.;
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RGAITGIVSRTDLTRSIEVLGYR
                                                  GSAVVGIVTPSDVARLIDV--YR
                                                                                                          GIVTFTDIRSVPMSEHGNVLVREV-MAKNVVFIPEDADAMDAL--KMMSTENVGQLLVQD
                                                                                                                                                          GLVALRQLRDVAPSRRSTTSVGDIALPLHSVPTARPQEPLTALLERMAPLGPRSRALVTE
                                                                                                                                                                                                                                                       EETRISTQQLFAGVRVADAMTAQPHTAPGWINVEDFIQRYVLGERHSAYPVADR-DGSIT
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RESULT 13
Y528_SYNY3
                                                  Best Local Similarity Matches 115; Conserv
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Best Local
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Metal-binding;
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Q55518;
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Miyajima N., Hirosawa M., Sugiura M., Sasamoto S., Kimura
Hosouchi T., Matsuno A., Muraki A., Nakzzaki N., Naruo K.
Shimpo S., Takeuchi C., Wada T., Watanabe A., Yamada M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sugiura M., Tabata S.; Sequence analysis of the genome of the unicellular cyanobacterium Synechocystis sp. strain PCC6803. I. Sequence features in the 1 Mb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hypothetical protein s1105. OrderedLocusNames=s110528;
                                                                                                                                                                                                               Pfam; PF00571; CBS; 1.
Pfam; PF02163; Peptidase_M50;
SMART; SM00116; CBS; 2.
PROSITE; PS00142; ZINC_PROTBAS
                                                                                                                                                                                                                                                                                                      EMBL; BA000022; BAA10876.1; -; Genomic PIR; S76029; S76029.
                                                                                                                                                                                                                                                                                                                                                                                                                    -!- COFACTOR: Binds 1 zinc ion per subunit (By similarity).
-!- SUBCELLULAR LOCATION: Integral membrane protein (Potential).
-!- SIMILARITY: Belongs to the peptidase M50B family.
-!- SIMILARITY: Contains 2 CBS domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUCLEOTIDE SEQUENCE [LARGE SCALE GENOMIC MEDLINE=97061201; PubMed=8905231;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUCLEOTIDE SEQUENCE [LARGE SCALE MEDLINE=96127529; PubMed=8590279; Kaneko T., Tanaka A., Sato S., Ko
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Synechocystis sp. (strain PCC 6803).
Bacteria; Cyanobacteria; Chroococcales; Synechocystis
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                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                         use as long as its content is in no way modified and this statement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Sequence analysis of the genome of the unicellular cyanobacterium Synechocystis sp. strain PCC6803. II. Sequence determination of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tabata S.;
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                                                                                                                                                                                                                                                                                          InterPro;
                                                                                                                                                                                                                                                                   nterPro;
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                                                                                                                                                                                                                                                                                                                                                                     s Swiss-Prot entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation European Bioinformatics Institute. There are no restrictions on i
                                                                                       SITE
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IPR006025; Pept M_Zn_BS.
IPR008915; Peptidase_M50
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EMBL; BX572998; CAE21400.1; -; Genomic_DNA.
GO; GO:0004222; F; metalloendopeptidase_activity; IEA.
GO; GO:0006508; P:proteolysis and peptidolysis; IEA.
InterPro; IPR008915; Peptidase_M50.
InterPro; IPR006025; Pept M Zn BS.
Pfam; PF02163; Peptidase_M50; IRR066025; Peptidase_M50; IRR066025; Peptidase_M50; IRR066025; Peptidase_M50; IRR066025; Peptidase_M50; IRR066025; Peptidase_M50; IRR066025; Peptidase_M50; IRR066042; ZINC_PROTEASE; UNKNOWN_1.
Complete_proteome; Hypothetical_protein.
SEQUENCE_422_AA; 45664_MM; 7C0E619F0DD1F948_CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=22825698; PubMed=12917642; DOI=10.1038/nature01947; Rocap G., Larimer F.W., Lamerdin J.E., Malfatti S., Chain P., Ahlgren N.A., Arellano A., Coleman M., Hauser L., Hess W.R., Johnson Z.I., Land M.L., Lindell D., Post A.F., Regala W., Shah Shaw S.L., Steglich C., Sullivan M.B., Ting C.S., Tolonen A., Webb B.A., Zinser E.R., Chisholm S.W.,
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OrderedLocusNames=PMT1225;
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MEDLINE-98049343; pubMed-9389475; DOI=10.1038/37052; MEDLINE-98049343; pubMed-9389475; DOI=10.1038/37052; MEDLINE-98049343; pubMed-9389475; DOI=10.1038/37052; MEDLINE-98049343; pubMed-9389475; DOI=10.1038/37052; MEDLINE-98049343; DOI=10.1038/37052; MEDLINE-98049343; DOI=10.1038/37052; MEDLINE-98049343; DOI=10.1038/37052; MEDLINE-98049343; DOI=10.1038/37052; MEDLINE-98049343; DOI=10.1038/37052; MEDLINE-98049343; DOI=10.1038/37052; MEDLINE-98049343; DOI=10.1038/37052; MEDLINE-98049343; MEDLINE-98049343; DOI=10.1038/37052; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-98049343; MEDLINE-
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Archaeoglobus fulgidus.
Archaea; Euryarchaeota; Archaeoglobi;
PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN_1.
Complete proteome; Hypothetical protein.
SEQUENCE 362 AA; 39865 MW; A09CF565765D7662 CRC64;
                                                                                                                                                Pfam; PF00571; CBS; 1.
Pfam; PF02163; Peptidase_M50; 1.
SMART; SM00116; CBS; 2.
                                                                                                                                                                                                                                                                   GO; GO:000422; F:metalloendopeptidase activity; IEA. GO; GO:0006508; P:protecolysis and peptidolysis; IEA. InterPro; IPR000644; CBS.
InterPro; IPR008915; Peptidase_M50.
InterPro; IPR008025; Pept_M_Zn_BS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                reducing archaeon Archaeoglobus Nature 390:364-370(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUCLEOTIDE SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; AE001082; AAB90905.1; -; PIR; D69291; D69291.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TIGR; AF0332;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "The complete genome sequence of the hyperthermophilic, sulphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ARCFU
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Last sequence up
Last annotation
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337 SRSDLMRIKEI 347
                                                                               359 TPSDVARLIDV 369
                                        284 IGVEPEER----VGNIM--SREVVAVSPNQSAFEAFKIMSEMG-IGRLPVVEHGRVVGIV 336
                                                           299 RDVAPSRRSTTSVGDIALPLHSVPTARPQEPLTALLERMAPLGPRSRALVTEGSAVVGIV 358
                                                                                                                       175 SYABATKI-AABIGRALAIFMAIF-------GIFTNPWLILIALFVYIGANBEBERLVLL 225
                                                                                                                                    179 GDSVRAGIGAARAGRVVALVLIALGLAEFVAGGLVGGVWLAFIGWFIFAAAREEETRIST 238
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Search completed: March 23, 2006, 05:24:28 Job time : 102.515 secs

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

| 27  | 25       | 24                 | 23              | 22                | 21                  | 20                  | 19                   | 18                   | 17                   | 16                 | 15                 | 14                | 13                  | 12                  | 11                  | 10                  | 9       | 8                    | 7                   | 6     | <sub>U</sub>         | 4                 | ω                    | 2                   | _                   | Result<br>No. |
|---|----------|--------------------|-----------------|-------------------|---------------------|---------------------|----------------------|----------------------|----------------------|--------------------|--------------------|-------------------|---------------------|---------------------|---------------------|---------------------|---------|----------------------|---------------------|-------|----------------------|-------------------|----------------------|---------------------|---------------------|---------------|
| 113<br>112.5                              | 113      | 113.5              | 114             | 114               | 114                 | 114.5               | 115                  | 115                  | 115.5                | 115.5              | 115.5              | 116               | 116                 | 119                 | 120                 | 120                 | 120     | 120.5                | 120.5               | 120.5 | 122                  | 125               | 139.5                | 174                 | 244                 | Score         |
| 5.7                                       | 5.7      | 5.7                | 5.7             | 5.7               | 5.7                 | •                   | •                    | 5.8                  | •                    | •                  | 5.8                | •                 | •                   | •                   |                     |                     | 6.0     | 6.1                  | 6.1                 | 6.1   | 6.1                  | 6.3               | 7.0                  | 8.7                 | 12.3                | Query         |
| 427                                       | 426      | 487                | 3724            | 3724              | 339                 | 592                 | 594                  | 312                  | 913                  | 551                | 551                | 1402              | 810                 | 332                 | 886                 | 574                 | 508     | 691                  | 472                 | 457   | 1033                 | 404               | 367                  | 346                 | 290                 | Length        |
| NN  | N        | N                  | _               | _                 | N                   | N                   | N                    | N                    | N                    | N                  | N                  | N                 | N                   | N                   | N                   | N                   | N       | N                    | N                   | N     | N                    | N                 | N                    | N                   | N                   | BB            |
| US-09-134-001C-4303<br>US-08-311-731A-216 | -09-252- | US-09-603-208A-238 | US-08-804-198-4 | US-08-804-227C-10 | US-09-902-540-13039 | US-09-902-540-10635 | US-09-252-991A-27335 | US-09-252-991A-24594 | US-09-252-991A-29362 | US-09-438-185A-616 | US-09-198-452A-653 | US-09-712-363-166 | US-09-902-540-12414 | US-09-902-540-15291 | US-09-902-540-11981 | US-09-902-540-10370 | -489-   | US-09-252-991A-19506 | US-09-902-540-15926 |       | US-09-252-991A-20611 | US-09-712-363-257 | US-09-252-991A-29289 | US-09-902-540-13409 | US-09-902-540-16040 | ID            |
| Sequence 4303, Ap<br>Sequence 216, App    | 25192    | 23                 | 4.              | Sequence 10, Appl | Sequence 13039, A   | Sequence 10635, A   | Ø                    | Sequence 24594, A    | 29362                | 616,               | 653,               | Sequence 166, App | Sequence 12414, A   | Sequence 15291, A   |                     | æ                   | e 7541, | Seguence 19506, A    | Sequence 15926, A   | 2350, | æ                    | e 257,            | 29289,               | Sequence 13409, A   | Sequence 16040, A   | Description   |

RESULT 2 US-09-902-540-13409 ; Sequence 13409, Application US/09902540

| 112.5 5.7 625 2 US-09-252-991A-31301 112.5 5.7 625 2 US-09-252-991A-31301 112.5 6 491 2 US-09-252-991A-17681 112.5 6 492 2 US-09-252-991A-17681 112.5 6 564 2 US-09-252-991A-17681 112.5 6 7257 2 US-09-268-102-5 112.5 6 7257 2 US-09-567-969-5 112.5 6 7257 2 US-09-567-969-5 112.5 6 7257 2 US-09-568-486-5 112.5 6 7257 2 US-09-568-486-5 112.5 6 7257 2 US-09-568-486-5 112.5 6 7257 2 US-09-568-498-2 112.5 6 7257 2 US-09-568-498-5 112.5 6 7257 2 US-09-568-498-2 113.5 6 800 2 US-09-902-540-11684 111.5 5.6 953 2 US-09-828-498-2 110.5 5.6 534 2 US-09-252-991A-30725 | 45                   | 44       | 43       | 42                  | 41       | 40              | 39       | 38       | 37       | 36       | <u>ა</u> | 34              | ω<br>ω   | 32                   | 31                  | 30       | 29       | 0     |
|--|----------------------|----------|----------|---------------------|----------|-----------------|----------|----------|----------|----------|----------|-----------------|----------|----------------------|---------------------|----------|----------|-------|
|  | 110.5                | 111      | 111.5    | 111.5               | 112      | 112             | 112      | 112      | 112      | 112      | 112      | 112             | 112      | 112                  | 112                 | 112      | 112.5    | 110.0 |
|  | 5.6                  | 5.6      | 5.6      | 5.6                 | 5.6      | 5.6             | 5.6      | 5.<br>6  | 5.6      | 5.6      | 5.6      | 5.6             | 5.6      | 5.<br>6              | 5.6                 | 5.<br>6  | 5.7      |       |
| 2 US-09-438-185A-346<br>2 US-09-252-991A-31301<br>2 US-09-655-703B-1846<br>2 US-09-252-991A-17681<br>2 US-09-252-991A-17681<br>2 US-09-258-910-17-6<br>2 US-09-258-17-4<br>2 US-09-258-409-5<br>2 US-09-568-480-5<br>2 US-09-568-480-5<br>2 US-09-568-472-5<br>2 US-09-568-472-5<br>2 US-09-568-472-5<br>2 US-09-568-472-5<br>2 US-09-568-472-5<br>2 US-09-258-498-2<br>2 US-09-902-540-11684<br>US-09-902-540-14681<br>2 US-09-902-540-14681  | 534                  | 953      | 2910     | 800                 | 7257     | 7257            | 7257     | 7257     | 7257     | 7257     | 7257     | 7257            | 3519     | 564                  | 492                 | 411      | 625      |       |
| US-09-438-165A-346<br>US-09-252-991A-11301<br>US-09-252-991A-17681<br>US-09-452-911A-17681<br>US-09-428-517-4<br>US-09-428-517-5<br>US-09-568-102-5<br>US-09-568-408-5<br>US-09-568-408-5<br>US-09-568-472-5<br>US-09-568-472-5<br>US-09-568-472-5<br>US-09-568-472-5<br>US-09-568-472-5<br>US-09-568-472-5<br>US-09-568-472-5<br>US-09-568-472-5<br>US-09-568-472-5<br>US-09-568-472-5<br>US-09-568-472-5<br>US-09-568-472-5  | N                    | N        | N        | N                   | N        | N               | N        | N        | N        | N        | 2        | N               | N        | N                    | N                   | N        | N        | e     |
|  | US-09-252-991A-30725 |          |          | US-09-902-540-11684 | -10      | US-09-567-899-5 | -09      | -09      | -09      | -09      |          | US-09-335-409-5 | -09      | US-09-252-991A-17681 | US-09-605-703B-1846 |          | -09      |       |
|  | 30725, A             | 14681, A | 2, Appli | 11684, A            | 5, Appli | 5, Appli        | 5, Appli | 5, Appli | 5, Appli | 5, Appli | 5, Appli | 5, Appli        | 4, Appli | 17681, A             | 1846, Ap            | 31301, A | 346, App | HOE   |

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US-09-902-540-16040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: 60/217,883
PRIOR FILING DATE: 2000-07-10
NUMBER OF SEQ ID NOS: 16825
SEQ ID NO 16040
LENGTH: 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
APPLICANT: Goldman, Barry S.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: MYXCOCCUS xanthus Genome Sequences and Uses Thereof
FILE REFERENCE: 38-10(15849)B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 12.3%; Score 244; DB 2; Length 290; Best Local Similarity 30.5%; Pred. No. 2.6e-16; Matches 91; Conservative 48; Mismatches 117; Indels 42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 16040, Application US/09902540 Patent No. 6833447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/09/902,540 CURRENT FILING DATE: 2001-07-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: PRT
ORGANISM: Myxococcus xanthus
  218
                                                                                                                                                                                                                                                                                                                                                     148 TVNLLLGLFNLLPGAPLDGGRLVRAYLWRRHGDSVRAGIGAARAGRVVALVLIALGLAEF 207
                                                   315 ALPLHSVPTARPQEPLTALLERMAPLGPRSRALVTEGSAVV-GIVTPSDVARLIDVYR 371
                                                                                                                                                      260 GWINVEDFI-----QRYVLGERHSAYPVADRDGSITGLVALRQLRDVAPSRRSTTSVGDI 314
                                                                                                                                                                                                                                                           208 VAGGLVGGVW------LAFIGWFIFAAAREEETRISTQQLFAGVRVADAMTAQPHTAP 259
                                                                                                                                                                                                                                                                                                                    61 SINIFIGVENILPAFPMDGGRIVRASIAGRIG-MVRATQVASWIGRGFAVLF-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        88 LFGGVTALGGEAKTPKAAFRIAFAGPATSLALSATFGALAITLAGVRTPAIVISVAWWLA 147
                                                                                                                                                                                                                                                                                                                                                                                                                       2 MVGGVSELTEAPPRPRDEALMAAVGPLTSILLAVLLGGATWLLQEVRSFNLQFAF-FYMA
                                                                                                  AGASLEQALWDLRRARLLL-----LPVTE-DERPVGQVSLETVRAVPDSERMTRTVREV 217
MVP--AVVVRLDEDGWTA-LRRMAE-EERPQLVVVEADGVLAGTLDVNDVQRGMALYQ 271
                                                                                                                                                                                                          ------GVWAVLSLNPFLVVIAFFIFMGAQGEAQQVRMKMTLERVPVADLMTPRRVGVD 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 290;
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APPLICANT: Goldman, Barry S.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and User FILE REFERENCE: 38-10(15849)B
CURRENT APPLICATION NUMBER: US/09/902,540
CURRENT FILING DATE: 2001-07-10
PRIOR APPLICATION NUMBER: 60/217,883
PRIOR APPLICATION NUMBER: 60/217,883
PRIOR PILING DATE: 2000-07-10
NUMBER OF SEQ ID NOS: 16825
SEQ ID NO 13409
LENGTH: 346
TYPE: PRT
ORGANISM: Myxococcus xanthus
US-09-902-540-13409
                                                                                                                     CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR TILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 29289
LENGTH: 367
TYPE: PRT
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US-09-252-991A-29289
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                                                                                 US-09-252-991A-29289
Query Match
Best Local S
Matches 98
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                                                                                                                                                                                                                                                                                                                                          APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                           FILE REFERENCE:
                                                                                                  ORGANISM: Pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                231
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   167 GR----LVRAYLWRRHGDSVRAGIGAARAGRVVALVLIALGLAEFVAGGLVGGVWLAFIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                117 LALSATFGALA------ITLAGVRTPAIVISVAWWLATVNLLLGLFNLLPGAPLDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19 IVFVSVLLHELGHALAFRRYGCPAR-IELHGMGGTTQTHDAAHLTHQQSAFVSFAGPGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              58 MLLASILAHELAHAVVARRAGVSVESVTLWLFGGVTALGGEAK-TPKAAFRIAFAGPATS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          92:
  98; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LHTGRLQELASLLDSSHARQLSEDTLALISEHAGTV 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WFIFAAAREEETRISTQQLFAGVRVADAMTAQPHTAP-GWINVEDFIQRYVLGERHSAYP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    --TALLERMAPLGPRSR-----ALVTEGSAVV 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PGAADADDDLEGPHDPALVGEMLLDNGLPE----LAVGSLQSAFTQAPLARTGHALVLAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      --VADRDGSITG----LVALRQLRDVAPSRRSTTSVGDIALPLHSVPTARPQEPL----
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    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                           107196.136
7.0%; Score 139.5; DB 2
24.9%; Pred. No. 1.5e-05;
tive 48; Mismatches 143
                                                                                                  aeruginosa
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27.4%; Pred. No. 4.3e-09;
tive 37; Mismatches 137;
                                     DB 2;
      143;
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                                     Length 367;
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      Indels
    105;
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  Gaps
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    18;
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; ORGANISM: Mycobacterium tuberculosis US-09-712-363-257
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                                                                                                                                                                                                                                               PRIOR APPLICATION NUMBER: PCT/US00/02246
PRIOR FILING DATE: 2000-01-28
PRIOR APPLICATION NUMBER: 60/179,531
PRIOR FILING DATE: 2000-02-01
PRIOR APPLICATION NUMBER: 60/117,844
PRIOR PILING DATE: 1999-01-29
PRIOR APPLICATION NUMBER: 60/118,206
PRIOR APPLICATION NUMBER: 60/126,593
PRIOR FILING DATE: 1999-03-06
PRIOR APPLICATION NUMBER: 60/126,593
PRIOR FILING DATE: 1999-03-26
PRIOR APPLICATION NUMBER: 60/134,093
PRIOR APPLICATION NUMBER: 60/134,093
PRIOR PILING DATE: 1999-05-14
PRIOR APPLICATION NUMBER: 60/134,093
PRIOR FILING DATE: 1999-05-14
PRIOR FILING DATE: 1999-05-14
PRIOR FILING DATE: 1999-05-14
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                                                                                        NUMBER OF SEQ ID NOS:
SOFTWARE: FastSEQ for
SEQ ID NO 257
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Patent No. 68921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILE REFERENCE: 07419-032001
CURRENT APPLICATION NUMBER: US/09/712,363
CURRENT FILING DATE: 2000-11-13
                                                                                                                                                         PRIOR APPLICATION NUMBER: 60/165,086 PRIOR FILING DATE: 1999-11-12
                                                                                                                                                                                                         PRIOR
PRIOR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Eisenberg,
APPLICANT: Rotstein,
APPLICANT: Marcotte,
                                                                     LENGTH:
                                                                                                                                                                                                       APPLICATION NUMBER: 60/
FILING DATE: 1999-11-12
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   324 AELSITAEALQISVPLVTALQVLRLLLVLFLAEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           196 ALVLIALGLAEFVAGGLVGGV------WLAF-----IGWFIFAAAREEETR--
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24 ILWLFTWSLATMLPGTVGGYPAVVY-----WLLGAGGAVMLLASLLAHELAHAVVARRAG 78
                                                                     404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NPWLLGPLLLAAGVSLGFDLHIGLPAGSSGVGQWL-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LVVLLVPAAFQYLLGGGQPGPHQAAPVDWHWLALLFPAGALVALGW-----QKLRQP 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VSVESVTLWLFG-GVTALGGEAKTPKAAFRIAFAGPATSLALSA--TFGALAITLAGVRT 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RSRALVTEGSAV-VGIVTPSDVARLIDVYRLAQP 375
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SITGLVALRQLRDVAPSRRSTTSVGDIALPLHSVPTARPQEPLT-----ALLERMAPLGP 342
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                                                                                                                   for Windows Version
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Matches Query Match

Local Similarity hes 57; Conserv

Conservative

20;

Mismatches

66

Indels

54;

Gaps

9:

6.3%;

Score 125; DB 2; Length 404; Pred. No. 0.00051;

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CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR PILING DATE: 1998-02-18
PRIOR PILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR PILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 20611
LENGTH. 100
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US-09-252-991A-20611
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GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 1033
TYPE: PRT
ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               / Match 6.1%;
Local Similarity 25.5%;
                                                                                                                                                                                                                        565
                                                                                                                                                                                                                                                                                                       505
                                                                                                                                                                                                                                                                                                                                            172
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                                                              658
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21 VLVILWLFTWSLATMLPGTVGGYPAVVYWLLGAGGAVMLLA-----SLLAHELAHAV 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94;
                                                              GLPVOMVL 665
                                                                                                   QEPLTALL 334
                                                                                                                                                                                                                                                                                                                                          AYLW-----RRHGDSVRAGIGAA-RAGRVVALVLIALGL------AEFVAGGLV 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                              VVDDAIVVVENVHRHI-----EEGKSPVAAALIGAREVAGPVIAMTITLAAVYTPIG
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                                                                                                                                           GGINLAAWEKRERDAS--
                                                                                                                                                                              LGERHSAYPVADRDGSITGLVALRQLRDVAPSRRSTTSVGDI-----ALPLHSVPTARP 326
                                                                                                                                                                                                                                                             GGVWLAFIGWFIFAAAREEETRISTQQLFAGVRVADAMTAQPHTAPGW-INVEDFIQRYV 272
                                                                                                                                                                                                                                                                                                     AAEWFFGGLTRRYGQVLEFSLGHRWLTGGLALLVCISLPLLYSMPKRELAPTEDQAAVLT
                                                                                                                                                                                                                                                                                                                                                                                                                       -----GAL----AITLAGVRTPAIVIS--VAWWLATVNLLLGLFNLLPGAPLDGGRLVR 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ---ATYVVLVLVVGYML 389
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                                                                                                                                                                                                                      -AIKAPQHANLDYVELFAR-KLDQVYTSIPETVSTWIINGTDGPAASF 610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          47; Mismatches 123; Indels 104;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 122; DB 2;
Pred. No. 0.0042;
                                                                                                                                         -AIQSELQGKVGDVEGSSIFAFQLAALPGSTG
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APPLICANT: Goldman, Barry S.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Wiester, Steven C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sectile Reference: 38-10(15849)B
FILE REFERENCE: 38-10(15849)B
CURRENT APPLICATION NUMBER: US/09/902,540
CURRENT FILING DATE: 2001-07-10
PRIOR APPLICATION UNMBER: 60/217,883
PRIOR FILING DATE: 2000-07-10
                                                                                                                                                                                               US-09-902-540-15926
Sequence 15926, Application US/09902540
Patent No. 6833447
GENERAL INFORMATION:
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APPLICANT: Kroger, Burkhard
APPLICANT: Schroder, Hartwig
APPLICANT: Zelder, Oskar
APPLICANT: Telder, Oskar
APPLICANT: Haberhauer, Gregor
TITLE OF INVENTION: CDRYNEBACTERIUM GI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR FILING DATE: 1999-07-08
PRIOR APPLICATION NUMBER: 60/152,318
PRIOR FILING DATE: 1999-09-03
NUMBER OF SEQ ID NOS: 2934
SEQ ID NO 2350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
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CURRENT FILING DATE: 2000-06-27
PRIOR APPLICATION NUMBER: 60/142,764
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TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Corynebacterium glutamicum
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 GRIAGFVVNVHWSVLVILWL---FTWSLATMLP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               83;
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                                                                                                                                                                                                                                                                                                                                                                                                                         SMALSASRSGSLIALIGSVVIIAVLVS--
                                                                                                                                                                                                                                                                                                                                                                                                                                                            SAYPVADRDGSITGLVALRQLRDVAPSRRSTTSVGDIALPLHSVPTARPQEPLTAL-LER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FIFAAARESETRISTQQLFAGVRVADAMTAQPHTA--PGW----INVEDFIQRYVLGERH 277
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                                                                                                     Sequences
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FILE REPERBUGE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR PILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 19506
LENGTH: 691
TYPE: PRT
ORGANISM: Beeudomonas aeruginosa
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US-09-902-540-15926
                                                                                                                                                                                             US-09-252-991A-19506
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SEQ ID NO 15926
LENGTH: 472
TYPE: PRT
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Patent No. 6551795
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Best Local Similarity
Matches 92; Conserv
                                                                                                                               Matches
                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING
TITLE OF INVENTION: ABBUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION:
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                                                                                            LLGAGGAVMLLASLLAHELAHAVVARRA--GVSVESVTLWLFGGVTALGGEAKTP----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YVLGERHSAYPVADRDGSITGLVALRQL-RDVAPSRRSTTSVGDIALPLHSVPTARPQEP
                               -KAAFRIAFAGPATSLALSATFGALAITLAGVR----TPAIVISVA---WWLATVNLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WFIFAAAREEETRISTQQLFAGVRVADAMTAQPHTAPGW-----INVEDFIQR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTVGGYPAVVYWLLGAGGAVMLLASLL--AHELA-----HAVVARRAGVSVESVTL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WLFGGVTA-LGGEAKTPKAAFRIAFAGPATSLALSATFGALAITLAGVRTPAIVISV---
GRVEDRYGIAIPYVA-ÁVPÁRGGQQÁTTFLAVRIASGDLPADVLFYGEHDVQRHRANLAG
                                                               VLHADHALGVVALAGTGELGDALGALRVVPGIGQLGAVAGLHGAV--VGGTQPAPLRVLV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LTALLERMAPLGPRSRALVT-EGSA-----VVGIVTPSDVA 364
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                                                                                                                               Conservative
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llarity 22.9%;
Conservative 5
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                                                                                                                                            6.1%; Score 120.5; DB 25.7%; Pred. No. 0.0033;
                                                                                                                             40; Mismatches 166;
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Pred. No. 0.0019;
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                                                                                                                                                           DB 2;
                                                                                                                                                           Length
                                                                                                                               Indels
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US-09-489-039A-7541
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Best Local S
Matches 86
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CURRENT APPLICATION NUMBER: US/09/489,039A
CURRENT FILING DATE: 2000-01-27
PRIOR APPLICATION NUMBER: US 60/117,747
PRIOR FILING DATE: 1999-01-29
NUMBER OF SEQ ID NOS: 14342
SEQ ID NO 7541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Patent No. 6610836
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 7541, Application
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Gary Breton et. al TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TITLE OF INVENTION: PNEUMONIAE FOR DIAGNOSTICS AND THERAPEUTICS FILE REFERENCE: 2709.2004001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: PRT
ORGANISM: Klebsiella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH: 508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
   500
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98
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   PPPVR
                                   VPTAR 325
                                                                 WLGLYEIIPGFVFGS-
                                                                                                 WINVEDFIORYVLGERHSAYPVADRDGSITGLVALRQLRDVAPSRRSTTSVGDIALPLHS
                                                                                                                                PENRVLGLVSYAWAGFGAAFGPVVLFSVMWSRMTR---NGALAGM-VIGALTVIVWKQFG
                                                                                                                                                           AEFVAGGLVGGVWLAFIGWF----IFAAAREEETRISTQQLFAGVRVADAMTAQPHTAPG
                                                                                                                                                                                              MSTLSC-----QLLVCSSAITEDLYKAFLRKNAGQKELVWVGRMVV-LVVALVAIALAAN
                                                                                                                                                                                                                                                          GEAKTPKAAFRIAFAGPATSLALSATFGALAI-----TLAGVRTPAIVISVAWW 145
                                                                                                                                                                                                                                                                                                                                                           ----AVVYWILGAGGAVMIJLASIIJAHELAHAVV-ARRAGVSVESVTIWI----FGGVTALG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                         47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 120; DB 2;
Pred. No. 0.0023;
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                                                                  --IGIVVF-SLLDKAPSASMQQRFAEADAHYHT
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RESULT 10 US-09-902-540-10370

GENERAL INFORMATION:

APPLICANT: Goldman, Barry S.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Wiegand, Roger C.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and FILE REFERENCE: 38-10(15849)B
CURRENT APPLICATION NUMBER: US/09/902,540
CURRENT FILING DATE: 2001-07-10

Sequence 10370, Application US/09902540 Patent No. 6833447

ORGANISM: Myxococcus xanthus US-09-902-540-10370

Query Match 6.0%; Score 120; DB 2; Best Local Similarity 22.2%; Pred. No. 0.0028;

Matches

95; Conservative

53; Mismatches 126;

DB 2;

Length 574; Indels 154;

SEQ ID NO 10370 LENGTH: 574 TYPE: PRT

PRIOR APPLICATION NUMBER: 60/217,883
PRIOR FILING DATE: 2000-07-10
NUMBER OF SEQ ID NOS: 16825

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RESULT 11
US-09-902-540-11981
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GENERAL INFORMATION:
APPLICANT: Goldman, Barry S.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and Uses Thereof FILE REFERENCE: 38-10(15849)B
CURRENT APPLICATION NUMBER: US/09/902,540
                                                                                                                                                                                              Sequence 11981, Ap
Patent No. 6833447
                                                                                                                                                                                                                                                                                                                                                                                  369 VYRLAQPE 376
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486 IFLV-----

318

SMVWAGVSKLLATGV----AALPGSARMGALCG---

261

339 179 119

--AILGPVAVFLM-----AYLFQIPWWAGVLAM-----PL--

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397 LLTDLKSGWLLGANPRQQ----FVAQLFGVVAGAAVVVPVFKILVPDASMLGTEEFPAPA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       65 AHELAHAVVARRAGVSVESVTLWLFGGVTALGGEA-----KTPKAAFRIAFAGPATSLA 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11 AGFTVVNVH--WSVLV--ILWLFTWSLATMLPGTVG--GYPAVVYWLLGAGGAVMLLASLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ---WINVEDFIORYVLGERHSAYPVADRDGSITGLVALRQLRDVAPSRRSTTSVGDIALP 317
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                                                                                                                                                                                                                                                                                                                                                                                                                                       LHSVPTARPQEPLTALLERMAPLGPRS-----RALVTEGSAVVGIVTPSDVARLID 368
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                                                                                                                                                                                                                                                                                                                                                                                            LLERWAPAKAKAYVPSPAGFGLAIVIPGSSSIAFFLGSAIAELL- 533
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                                                                                                                                              APPLICANT: Goldman, Barry S.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sec
FILE REFERENCE: 38-10(1584)B
CURRENT APPLICATION NUMBER: US/09/902,540
CURRENT FILING DATE: 2001-07-10
PRIOR APPLICATION NUMBER: 60/217,883
PRIOR FILING DATE: 2000-07-10
NUMBER OF SEQ ID NOS: 16825
SEQ ID NO 15291
LENGTH: 332
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                                                                                          ; ORGANISM: Myxococcus xanthus US-09-902-540-15291
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US-09-902-540-15291
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQ ID NO 11981
LENGTH: 886
TYPE: PRT
                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 15291, Application US/09902540 Patent No. 6833447
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Best Local (
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PRIOR APPLICATION NUMBER: 60/217,883
PRIOR FILING DATE: 2000-07-10
NUMBER OF SEQ ID NOS: 16825
                                                                                                                                       TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       441
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 295 TLLAGALFARTQAPTDPGWWVFGGTVATAGLMFLARWSAFPGLRIRLLAWTLLGSLVAMP 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              235 VAYAVLASGAVVGALGAFSSEPGGDFQVDLASALAPLIAAGVFFLLEPRRRALVHLMVMT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         46 VVYWLLGAGGAVMLLASL------LAHELAHAVVA-----RRAGVSVESVI 85
    64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QPASRRDGLLPLDDLALCLAAAGVLLAVDSSP-SAPDLLVSVTGLSASVL----SALPTA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SALRGRTPLDAADTAAGRERRRMFDLFRLPLGARGLPLFTDGFATAALV-QTVIAALTLA 613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VVTAWLLLRVRRDGSRLVGFLAASGLALAVSQVMGTVSDFA-SPRAALVAASLALGFAAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----DRDGS-ITGLVA------LRQLRDVAPSRRSTTSVGDIALPLHSV 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LSATFGALAITLAGVRTPAIVISVA------WLATVNLLLGLFNLLPGAP-LDG 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PTARPQEPLTAL------LERM-----APLGPRSRALVTEGSAVVGIVTPSDVARLIDV 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAREEETRISTQQL---FAGVRVADAMTAQPHTAPGWINVEDFIQRYVLGERHSAYPVA 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 L-----EAKTPKAAFRI---AFAGPATSLA 118
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    Conservative
6.0%; Score 119; DB 2;
26.4%; Pred. No. 0.0016;
htive 19; Mismatches 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      44; Mismatches 149;
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                                             Length 332;
    Indels
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    88;
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APPLICANT: Goldman, Barry S.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sectiff Reference: 38-10(15849) B
CURRENT APPLICATION NUMBER: US/09/902,540
CURRENT FILING DATE: 2001-07-10
PRIOR APPLICATION NUMBER: 60/217,883
PRIOR FILING DATE: 2000-07-10
UNMBER OF SEQ ID NOS: 16825
SEQ ID NO 12414
LENGTH: 810
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US-09-902-540-12414
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 12414, Application US/09902540 Patent No. 6833447
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Best Local Similarity
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                                                                              263 NVEDFIQRYVLGERHSAYPVADRDGSITGLVALRQLRDVAP----SRRSTTSVGDIALPL
                                                                                                                                                                                                                                                                                                                                                                    244 MEEAVP-----SRYRKVGWS-----FSVTSLDEKVVGNVRGTLWLLLGAVGFVLLA
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                                                                                                                                                                                                                                                                                                                                                                                                                                    110;
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                                                                                                                                                                                                                                                                                                                                                                                                  1 MRDAIPLGRIAGEVVNVHWSVLVILWLETWSLATMLPGTVGGYPAVVYWLLGAGGAVMLL
HSVPTARPQEPLTALLER-MAPL-GPRSRAL------VTEGSAVVGIV-------
                                                                                                                                                                                                           PLDGGRLVRAYLWRRHGDSVRA-GIGAARAGRVVALVLIALGLAEFVAGGLVGGVWLAFI
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                                                                                                                                                                                                                                           SLAGGVIGMLLALWGTDALVALVGEALPRASQVRLDARPLVFTMGVSLLTGVLFGL--GP
                                               GVTNLLP--LGGRSDSSFDIEGRPQAPDEVWPAVEFRSVSPGYLRTLRVTPREGHL---
                                                                                                                                           GWFI--FAAAREEETRISTQQLFAG-----VRVADA------MTAQPHTAPG--WI
                                                                                                                                                                            ALHGSREDLSVAMREGSRGTEGHGSGRMRAGLVVGQVAVALVL-----LVGA-----
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                                                                                                                                                                                                                                                                        ACSSVANLLLARMAARGREVSIRA-----ALGASRGRLVAQFL-----TESLVL
                                                                                                                                                                                                                                                                                                                                     A-SLLAHELAHAVVARRAGVSVESVTLWLFGGVTALGGEAKTPKAAFRIAFAGPATSLAL 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WL 282
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                                                                                                              GLFTKSFLALRAVDAGFTPEGVLTGKLVLPSARYPDAAHKVAFQRELLGRLQSLPGVEAV
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                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                 5.8%; Score 116; DB 2; Length 810;
25.0%; Pred. No. 0.012;
tive 46; Mismatches 168; Indels 116;
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VRVADAMTAQPHTAPGWINVED-----FIQRY-----

-VLGERHSAY 280

971

1029

-WLAPAPSVSDPTAAGQIGASDGGAELLASSGFAARLAGRSADEQLAAAIEVVCEHAAA-

VSVPTLRKDRPEPVSVWTAAAQGFVSGMGLDWAS--VFSGYRPKRVELPTYAFQHQKF--

AGGLVGGVWLAFIGWFIFAAAREEETRIST----QQLFAG 244

168 824

RLV-----RAYLWRRH-------GDSVRAG--IGAAR------AGRVVALVLIALGLAEF 207

QLVADDFASADYWARHIRAVVRFGDSVRSAHCAGASRFIEVGPGGGLTSLIEASLADAQI

915

109 AFAGPATSLALSATFGALAITLA-GVRTPAIVISVAWWLATVNLLLGLFNLLPGAPLDGG 167

ALMEP----MIAEFTAVAAELSVGLPTIPVISNVT------------G

855

764 QAREDEVAPMLGHDVSIAAVNGPASVVISGAHDAVSAIADRLRGQGRRVHRLAVSHAFHS 823

713 VRPGLVLGHSVGELAAAHVAGALCL-----PDAAMLVAARGR----LMQALPAGGAMFAV 763

-----LASLLAHELAHAVVARRAGVSVESVTLWLFGGVTALGGEAK-----TPKAAFRI 108

1 MRDAIPLGRIAGEVVNVHWSVLVILWLETWSLATMLPGTVGGYPAVVYWLLGAGGAVML-

Conservative

56;

Mismatches 162;

Indels 208;

Gaps

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RESULT 14
US-09-712-363-166
                                                                                                    ; ORGANISM: Mycobacterium tuberculosis US-09-712-363-166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: PCT/US00/02246
PRIOR FILING DATE: 2000-01-28
PRIOR PPLICATION NUMBER: 60/179,531
PRIOR FILING DATE: 2000-02-01
PRIOR FILING DATE: 2000-02-01
PRIOR APPLICATION NUMBER: 60/117,844
PRIOR FILING DATE: 1999-01-29
PRIOR FILING DATE: 1999-01-01
PRIOR FILING DATE: 1999-02-01
PRIOR FILING DATE: 1999-02-01
Query Match
Best Local Similarity
Matches 122; Conserv
                                                                                                                                                                                                   SOFTWARE: Fa
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                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION NUMBER: 60/126,593
PRIOR FILING DATE: 1999-03-26
PRIOR APPLICATION NUMBER: 60/134,093
PRIOR FILING DATE: 1999-05-14
PRIOR APPLICATION NUMBER: 60/134,092
PRIOR FILING DATE: 1999-05-14
PRIOR FILING DATE: 1999-05-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/09/712,363
CURRENT FILING DATE: 2000-11-13
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APPLICANT: Marcotte, Edward M.
TITLE OF INVENTION: INTERACTIONS OF PROTEINS
TITLE OF INVENTION: INTERACTIONS OF PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILE REFERENCE: 07419-032001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Eisenberg, David
                                                                                                                                                                                                                                                     NUMBER OF SEQ ID NOS: 292
                                                                                                                                                        TYPE: PRT
                                                                                                                                                                               LENGTH:
                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: 60/165,086
                                                                                                                                                                                                                                                                                                                           FILING DATE:
                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: 60/165,124
                                                                                                                                                                                                                                                                              FILING DATE:
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                                                                                                                                                                                                                                                                                                                         1999-11-12
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                                5.8%; Score 116; DB 2; Length 1402; 22.3%; Pred. No. 0.027;
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RESULT 15
US-09-198-452A-653
; Sequence 653, Application US/09198452A
; Patent No. 6559294
; Patent No. 6559294
; GENERAL INFORMATION:
APPLICANT: Griffals, R.
APPLICANT: Griffals, R.
TITLE OF INVENTION: Chlamydia pneumoniae genomic sequence and polypeptides, fragments
TITLE OF INVENTION: thereof and uses thereof, in particular for the diagnosis, preve
FILE REFERENCE: 970-003-999
; CURRENT APPLICATION NUMBER: US/99/198,452A
; CURRENT FILING DATE: 1998-11-24
; NUMBER OF SEQ ID NOS: 6849
; EEG ID NO 653
; LENGTH: 551
; TYPE: PRT
Search completed: March 23, Job time: 28.9039 secs
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Chlamydia
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                                                                                                                                                                            369 RKWGWT-----VGAL----VTPLVMLVSGLLFFGTIFAAKRDISIFGGVLGMTPLA
                                                                                         416 LAAW 419
                                                                                                                                220 FIGW 223
                                                                                                                                                                                                                     171 RAYLWRRHGDSVRAGIGAARAGRVVALVLIALGLAEF------VAGGLVGGVWLA 219
                                                                                                                                                                                                                                                                   310 AIIVLSYNLVIHLFEVVWKDQVSQIYSSHVEFNGYMSRITTLIGVVSVL-AAVLLTGQCI
                                                                                                                                                                                                                                                                                                             127 AITLAGVRTPAIVISVAW-------WLATVNLLLGLFNLLPGAPLDGGRLV 170
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MRDAIPLGRIAGFVVNVH-------WSVLVIIMLFTWSLATMLP--GTVGGYPA 45 ::: | | : | | : | | | | | | : |
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597934, A 597934, A 12134, A 8143, Ap 61860, A 158999, 166, App 297621, App 297621, App 167452, App 167349, A 57349, A 57349, A 57349, A 57349, A 653, App 316538, 49840, A 62037, App 82, Appl

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Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
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1: /cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*

2: /cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*

3: /cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*

4: /cgn2_6/ptodata/1/pubpaa/US10A_PUBCOMB.pep:*

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1990
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  GenCore version 5.1.7 (c) 1993 - 2006 Biocceleration
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US-10-617-038-28
US-10-1047-260-12
US-10-156-761-14201
US-10-156-761-1437
US-10-482-706-183
US-10-480-170-24
US-10-468-356-24
US-10-482-122A-50265
US-10-493-462-25
US-10-156-761-10433
US-10-295-122A-48123
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US-10-295-1258-991-936-1915
US-10-295-1258-991-936-1915
US-10-378-083-7
US-10-156-761-1852
US-10-156-761-1859
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Sequence 14201, Appl
Sequence 1437, A
Sequence 24, Appl
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Sequence 26, Appl
Sequence 27, Appl
Sequence 28, Appl
Sequence 29, Appl
Sequence 14, Appl
Sequence 17, Appl
Sequence 17542,
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12366, A
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4139, Ap
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US-10-617-038-28

Sequence 28, Application US/10617038

Publication No. US20040057963A1

GENERAL INFORMATION:

APPLICANT: Andersen, Peter

APPLICANT: Rosenkrands, Ida
APPLICANT: Stryhn, Anette

TITLE OF INVENTION: Therapeutic TB Vaccine

FILE REFERENCE: SSI5AUSA

CURRENT FILING DATE: 2003-07-11

PRIOR APPLICATION NUMBER: US/10/617;038

CURRENT FILING DATE: 2002-07-13

PRIOR APPLICATION NUMBER: US 60/401,725

PRIOR APPLICATION NUMBER: US 60/401,725

PRIOR FILING DATE: 2002-08-07

NUMBER OF SEQ ID NOS: 187

SOFTWARE: PRICE TION 28

LENGTH: 393

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; TYPE: PRT
; ORGANISM: Mycobacterium tuberculosis
US-10-617-038-28
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                                                                                                                                                                                    ASLLAHBLAHAVVARRAGVSVESVTLWLFGGVTALGGEAKTPKAAFRIAFAGPATSLALS
VAPSRRSTTSVGDIALFLHSVFTARPQEFLTALLERMAFLGFRSRALVTEGSAVVGIVTF
                                                                                                  SVRAGIGAARAGRVVALVLIALGLAEFVAGGLVGGVWLAFIGWFIFAAAREEETRISTQQ
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                                                  LFAGVRVADAMTAQPHTAPGWINVEDFIQRYVLGERHSAYPVADRDGSITGLVALRQLRD 300
                                                                                     SVRAGIGAARAGRVVALVLIALGLAEFVAGGLVGGVWLAFIGWFIFAAAREEETRISTQQ
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US-10-156-761-12134
US-10-156-761-1214
US-10-282-122A-61860
US-10-282-122A-61860
US-10-37-963-158999
US-09-712-363-16
US-10-37-963-167452
US-10-425-114-57349
US-10-282-122A-54741
US-10-282-122A-54741
US-10-282-123A-549840
US-09-976-059-23
US-10-282-122A-62037
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Result No.

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Query Match

Length Indels

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Minimum Maximum

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Title: Perfect score:

Scoring table: Sequence:

Searched:

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; ORGANISM: Synechocystis sp. strain PCC6803
US-10-047-260-12
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                                                                                                                                          Sequence 14201, Application US/10156761
Publication No. US20030119018A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: Microsoft Office 97
SEQ ID NO 12
LENGTH: 379
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Best Local Similarity
                          APPLICANT:
                                                                      APPLICANT: OMURA, SATOSHI
APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Huang, Lisa
APPLICANT: McClusky, Michael
APPLICANT: LaRossa, Robert
TITLE OF INVENTION: HIGH LEVEL PROMOTERS FROM CYANOBACTERIA
FILE REFERENCE: CL1715 US NA
CURRENT APPLICATION NUMBER: US/10/047,260
CURRENT FILING DATE: 2002-01-15
CURRENT FILING DATE: 2002-01-07-4 025
       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION NUMBER: 60/264,925
PRIOR FILING DATE: 2001-01-30
NUMBER OF SEQ ID NOS: 40
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IKEDA, HARUO
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HORIKAWA, HIROSHI
SHIBA, TADAYOSHI
SAKAKI, YOSHIYUKI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches 147;
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; TITLE OF INVENTION: NOVEL POLYNUCLECTIDES
; FILE REFERENCE: 249-262
; CURRENT APPLICATION NUMBER: US/10/156,761
; CURRENT FILING DATE: 2002-05-29
; PRIOR APPLICATION NUMBER: JP 2001-204089
; PRIOR FILING DATE: 2001-05-30
PRIOR FILING DATE: 2001-08-02
; NUMBER OF SEG ID NOS: 15109
; SEQ ID NO 14201
; LENGTH: 376
; TYPE: PRT
; ORGANISM: Streptomyces avermitilis
US-10-156-761-14201
                                      APPLICANT: ISHIKAMA, JUN
APPLICANT: HORIKAWA, HIROSHI
APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2001-05-30
PRIOR FILING DATE: 2001-05-30
PRIOR FILING DATE: 2001-05-30
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 14437
                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: OMURA, SATOSHI
APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
APPLICANT: HORIKAWA, HIROS
APPLICANT: SHIBA, TADAYOSH
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Best Local Similarity 31.0%;
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         LENGTH:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            232 AGNSLRMARLREHLPELRARNLTR--RAVPVETDTPLS-----EALRRANDAGAR--A 280
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         56 VLIHELAHTVAALREKLEVRRIQLOFFGGVSEIEKETETPGREFVLAFVGPLLSLILAGI 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       63 LLAHELAHAVVARRAGVSVESVTLWLFGGVTALGGEAKTPKAAFRIAFAGPATSLALSAT 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7 LGRIAGEVVNV--HWSVL--VILWLETWSLATMLEGTVGGYPAVVYWLLGAGGAVMLLAS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LVVVDADGEPLSLVREAAIVGVPEHRRPWVDVSGLAQDLTDGMRISAELAGEDLLDVLRA 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SGTIAAAWVGRALAVAVLIGLPLLTQTGALGSNAEDVGGMDTVTDALLAAI-LAAIIWTG 231
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PRIOR APPLICATION NUMBER: GB 0116385.6
PRIOR FILING DATE: 2001-07-04
PRIOR PILING DATE: 2001-10-05
PRIOR PILING DATE: 2001-10-05
NUMBER OF SEQ ID NOS: 282
SOFTWARE: Patentin version 3.1
SEQ ID NO 183
LENGTH: 591
TYPE: PRT
ORGANISM: Mycobacterium tuberculosis
US-10-482-706-183
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US-10-482-706-183
Sequence 183, Application US/10482706
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Publication No. US20 GENERAL INFORMATION:
                                                                                                                                                                                       Matches
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APPLICANT: Hampshire, Tobias
TITLE OF INVENTION: Mycobacterial Antigens Expressed During Latency
FILE REFERENCE: 1581.1030000
                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/10/482,706
CURRENT FILING DATE: 2004-01-02
                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: PCT/GB02/03052 PRIOR FILING DATE: 2002-07-04
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                                                                                                                                                                                                      Local
184
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                                                             130 GFAWWAAALNSLPMLAA--LAWVCADAILLVRTGNHRYAVT----GVLVYLGGLLFFEKA
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                                                                                                                                                     10 IAGFVVNVH---WS----VLVILWLF-----TWSLATMLPGTVG-----GYP
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AF--RIAFAGPATSLALSATFGALA-ITLAGVR--TPAIVISVAM---WLATV------
                                                                                                                          VAGAIIRVAPLVWTGPAISLVVLQLLESLALLRALYVISSWRPVLLIPLTFALFTPLAVP 129
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                                                                                           AVVYWLLGAGGAVMLLASLLAHELAHAVVARRAGVSVESVTLWLFGGVTALGGEAKTPKA
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                                                                                                                                                                                                   7.0%; Score 140; DB 5; Length 591; 24.0%; Pred. No. 0.001;
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                                                                                                                                                                                    Indels 134;
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VLGERHSAYPVADRDGSITGLVALRQLRDVAPSRRSTTSVGDIALPLHSVPTARPQEPLT 331
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RESULT 6
US-10-080-170-24
US-10-080-170-24
Sequence 24, Application US/10080170
Publication No. US20030129601A1
GENERAL INFORMATION:
APPLICANT: COLE, S.T.
APPLICANT: COLE, S.T.
TITLE OF INVENTION: COMPARATIVE MYCOBACTERIAL GENOMICS AS A TOOL FOR TITLE OF INVENTION: TREATMENT OF MYCOBACTERIAL GENOMICS AS A TOOL FOR TITLE OF INVENTION: TREATMENT OF MYCOBACTERIOSES
FILE REFERENCE: 03495,0218
CURRENT APPLICATION NUMBER: US/10/080,170
PRIOR APPLICATION NUMBER: 60/270,123
PRIOR PILING DATE: 2001-02-22
NUMBER OF SEQ ID NOS: 652
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; ORGANISM: Mycobacterium leprae
US-10-080-170-24
                                                                                                                                                                                    170 VRAYLWRR-----HGDSVRAGIGAARAGRVVALVLIALGLAEF--VAGGLVGGV----W
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LGVAGWSLWAANSPGMGDDATNVS----YSGIVDERRFYAQATGHAHP--LTAADYL---
                                                     LAFIGWFIFAA----AREESTRISTOOLFAGVRVADAMTAOP--HTAPGWINVEDFIQRY 271
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Pred. No. 0.0011;
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Publication No. US20040121322A9
GENERAL INFORMATION:
APPLICANT: COLE, S.T.
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CURRENT FILING DATE: 2002-06-10
PRIOR APPLICATION NUMBER: 60/270,123
PRIOR FILING DATE: 2001-02-22
NUMBER OF SEQ ID NOS: 652
SOFTWARE: Patentin Ver: 2.1
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ORGANISM: Mycobacterium leprae
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KNLFPD
                                                                       SLVSQK----POHTVFFT-NLGMLGMNVGLDV-RVIDQIGLANPLAQHTERLQHGRIGHD
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               RESULT 9
US-10-282-122A-50265
; Sequence 50265, Application US/10282122A
; Publication No. US20040029129A1
; GENERAL INFORMATION:
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Best Local Similarity
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CURRENT FILING DATE: 2003-08-19
PRIOR APPLICATION NUMBER: 10/080,170
PRIOR FILING DATE: 2002-02-22
PRIOR APPLICATION NUMBER: 60/270,123
PRIOR APPLICATION NUMBER: 60/270,123
PRIOR FILING DATE: 2001-02-22
NUMBER OF SEQ ID NOS: 655
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TITLE OF INVENTION: COMPARATIVE MYCOBACTERIAL GENEOMICS AS A TOOL FOR
TITLE OF INVENTION: IDENTIFYING TARGETS FOR THE DIAGNOSIS, PROPHYLAXIS
TITLE OF INVENTION: TREATMENT OF MYCOBACTERIOSES
APPLICANT: Wang, Liangsu
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                                                                                                                                                                                                                                                                                            ----GYP---
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23.5%;
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Pred. No. 0.0011;
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NUMBER OF SEQ ID NOS: 78614
SOETWARE: PatentIn version 3.1
SEQ ID NO 50265
LENGTH: 706
TYPE: PRT
ORGANISM: Burkholderia mallei
US-10-282-122A-50265
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Best Local Sim
Matches 110;
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PRIOR FILING DATE: 2000-03-21
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR FILING DATE: 2000-05-26
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FILE REFERENCE: ELITRA.034A
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT FILING DATE: 2003-02-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 2001-02-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 60/267,636 FILING DATE: 2001-02-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: 60/257,931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: 60/269,308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 2000-12-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 2000-11-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: 60/253,625
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                           GPGRWFAALAORDDLARTVLDLRAPRLLCALLAGALLGASGVLMQSIVRNPLAGPEVLGV
                                                      AFIGWFIFAAAREEETR-----
                                                                                                             RAYLW----RRHGDSVRAGI-GAARAGR------VVALVLIALGLAEFVAGGLVGGVWL
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Zyskind, Jud
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Trawick, John
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  -AGVRVADAMTAQPHTAPGWINVED-----FIQRYVLGERHSAYPVADRDGSITGL
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; TYPE: PRT; ORGANISM: Streptomyces avermitilis US-10-156-761-9868
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US-10-156-761-9868
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APPLICANT: OMURA, SA:
APPLICANT: IKEDA, HJ
APPLICANT: ISHIKAWA,
APPLICANT: HORIKAWA,
APPLICANT: SHIBA, TJ
APPLICANT: SHIBA, TJ
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PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 9868
LENGTH: 570
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2001-204089
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APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILE REFERENCE: 249-262
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Local Similarity 24.5%;
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                                                                                                                                                                                                           394 ----FLATRSQD----GYYLLMTPLWLAAAVTAPPSAFASAW------QPRLPFGAHRRRA 440
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HFTVTTNQGMNRYWSVKAGPAS--VPAHGSARYELLPPDG-----
                                                                                                                                                                                                                                                        GWFIFAAAREEETRISTQQLFAGVRVADAMTAQPHT-APGWINVEDFIQRYVLGERHS--
                                                  QEPLITAL -- LER -- MAPLGPRSRALVIEGSAVVGIVTPSDVARLIDVYRLAQPEP----
                                                                                                  ARVGVVALLLALPLSAAAYAVTGAPPLRM--EVLAVRRGTGTVTGLTLRVTNTGGTTMRP
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HORIKAWA, HIROSHI
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US-10-493-462-25
                                                                                                                                                                                                                                                            RESULT 12
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TYPE: PRT
; ORGANISM: Mycobacterium tuberculosis
US-10-493-462-25
Sequence 14, Application US/10205032
Publication No. US20030113874A1
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Farnet, Chris
APPLICANT: Yang, Xianshu
APPLICANT: Staffa, Alfredo
TITLE OF INVENTION: GENES AND PROTEINS FOR THE BIOSYNTHESIS OF ROSARAMICIN
FILE REFERENCE: 3016-2US
CURRENT APPLICATION NUMBER: US/10/205,032
CURRENT FILING DATE: 2002-07-26
NUMBER OF SEQ ID NOS: 39
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Best Local
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CURRENT FILING DATE: 2004-04-23
PRIOR APPLICATION NUMBER: PCT/GB02/04718
PRIOR FILING DATE: 2002-10-21
PRIOR APPLICATION NUMBER: GB 0125535.5
PRIOR FILING DATE: 2001-10-24
NUMBER OF SEQ ID NOS: 46
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TITLS OF INVENTION: Mycobacterial Genes Down-Regulated During
FILE REFERENCE: 1581.1040000
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les 94; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6.7%; Score 133; DB 5; Length 24.4%; Pred. No. 0.0083;
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US-10-378-083-6
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US-10-205-032-14
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CURRENT APPLICATION NUMBER: US/10/378,083
CURRENT FILING DATE: 2003-03-04
NUMBER OF SEQ ID NOS: 26
SOFTWARE: PATENTIN VERSION 3.1
SEQ ID NO 6
LENGTH: 3362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 6, Application US/10378083 Publication No. US20040053274A1 GENERAL INFORMATION:
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SEQ ID NO 14
LENGTH: 3745
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TITLE OF INVENTION: A gene cluster of vicenistatin biosynthase, a vicenisamine
TITLE OF INVENTION: glycosyltransferase polypeptide, and a gene encoding the
TITLE OF INVENTION: polypeptide
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nes 87; Conservat
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nes 107; Conserv
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                                      VDW---SAGAVELLIE--AREWPETGRPRRAGVSSFGFSGTNAHVIIEEASEFEPSAVEP 470
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                                                                               VYWLLGAGGAVMLLASLLAHELAHAVVARRAGVS-----VESVTLWLFGGVTA
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llarity 25.2%;
Conservative 40
                                                                                                                          Conservative
                                                                                                                        6.6%; Score 130.5; DB 4; 24.1%; Pred. No. 0.079; tive 52; Mismatches 153;
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  -KAAFRIAFAGPATSLALSATFGALAITLAGVRTPAIVI 140
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US-10-156-761-10433
; Sequence 10433, Application US/10156761
; Publication No. US20030119018A1
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PRIOR FILING DATE: 2001-05-30
PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 10433
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CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
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ISHIKAWA, JUN
HORIKAWA, HIROSHI
SHIBA, TADAYOSHI
---ARAGRVVALVLI-----ALGLAEFVA--GGLVGGVWLAFIGWFIFAAAREEETRIS 237
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                                                      -----GEGEDQVAVRSSGAYARRLVRAPLGANPAPVRDWNPHGTVLITGGTGGIGAHLA 1203
                                                                                                                           VGAEDVVHPVQTQVWALGQVAGLEQPGSWGGL-VDVPGVWDERVASGLTAVLAA-----
                                                                                                                                                            LGGEAKTPKAAFRIAFAGPATSLALSATFGALAITLAGVRTPAIVISVAWWLATVNLLLG
                                                                                                                                                                                                                                  -----RRAGVSVESVTLW-LFGGVTA
                                                                                                                                                                                                                                                                                                         LGRIAGFVVNVHWSVLVILWLFTWSLATMLPG-----TVGGYPAVVYW----
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                                                                                                                                                                                                                                                                                                                                          6.6%; Score 130.5; DB 4; ilarity 23.6%; Pred. No. 0.12; Conservative 47; Mismatches 168;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -- QATEEDVLALLEGVE----DASIAAINGPDAVVVSGTEAGVARVVDVL 742
                                                                                       -GGRLVRAYL-----
                                                                                       WRRHGDSV----RAGIGA---
                                                                                                                                                                                                                                                                                                                                            Indels 167;
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APPLICANT: Barbazuk, Brad

APPLICANT: Barbazuk, Brad

APPLICANT: Li, Ping

TITLE OF INVENTION: Rice Nucleic Acid Molecules and Other Molecules Associated With

TITLE ENTRY 18710N Plants and Uses Thereof for Plant Improvement

FILE REFERENCE: 38-21(53221)B

CURRENT APPLICATION NUMBER: US/10/437,963

CURRENT FILING DATE: 2003-05-14

NUMBER OF SEQ ID NOS: 204966

SEQ ID NO 177542

LENGTH: 487
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Search completed: March 23, Job time: 84.6454 secs
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Publication No. US20040123343A1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Match 6.4%; Score 128; DB 4; Length 487; Local Similarity 22.7%; Pred. No. 0.0097; les 54; Conservative 33; Mismatches 93; Indels
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                                                                                             408 ISSLAIGLLGISALFND--VAFYWVVLI-FFLQRGPISPLSEEITEPENNYISIGVAI 462
                                                                                                                                      194 VVALVLIALGLAEFVAGGLVGGVWLAFIGWFI----FAAAREEETRISTQQLFAGVRV 247
                                                                                                                                                                                                                                  134 RTPAIVISVAWWLATVNLLLGLFNLLPGAPLDGGRLVRAYLWRRHGDSVRAGIGAARAGR 193
                                                                                                                                                                                                                                                                                  301 LKVAAAGPLAGFSLGFVLLLLGFILPPSDGLGLVIDPAVFHESFLVGGLAKLILGDALKE 360
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                                                                                                                                                                                                                                                                                                                                                                                                                      52 GAGGAVMLLASILLAHELAHAVVARRAGVS-----VESVTIWLFGGVTALGGEAKTPKAA 105
                                                                                                                                                                                      GTKLSINPLVLW-AWAGLLINAINSIPAGELDGGRIAFA-MW
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ELEAFVVFSSGAAVWGSGSNGANAAAGGYLDGLVRRRRARGVAGTSVSWGGWQATAMAVG
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Published Applications AA New:*

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2: /cgn2 6/ptodata/1/pubpaa/US06 NEW PUB.pep:*

3: /cgn2 6/ptodata/1/pubpaa/US07 NEW PUB.pep:*

4: /cgn2 6/ptodata/1/pubpaa/US07 NEW PUB.pep:*

5: /cgn2 6/ptodata/1/pubpaa/US07 NEW PUB.pep:*

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GenCore version 5.1.7
Copyright (c) 1993 - 2006 Biocceleration Ltd
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

# SUMMARIES

| 25                | 24                   | 23               | 22                | 21                  | 20                  | 19                 | 18                | 17                | 16                 | 15                 | 14                 | 13                 | 12                | 11               | 10                 | 9                  | 8                 | 7                   | 6                 | ហ                 | 4                | ω                 | N                 | _                   | Result<br>No.         |
|-------------------|----------------------|------------------|-------------------|---------------------|---------------------|--------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|-------------------|------------------|--------------------|--------------------|-------------------|---------------------|-------------------|-------------------|------------------|-------------------|-------------------|---------------------|-----------------------|
| 101               | 101.5                | 102              | 102               | 102                 | 102                 | 102.5              | 103.5             | 104               | 104                | 104.5              | 104.5              | 105.5              | 106.5             | 109              | 109                | 109                | 110.5             | 112                 | 112.5             | 115               | 118.5            | 119               | 119               | 121                 | Score                 |
| 5.1               | 5.1                  | 5.1.             | 5.1               | 5.1                 | 5.1                 | 5.2                | 5.2               | 5.2               | 5.2                | 5.3                | 5.3                | 5.3                | 5.4               | 5.<br>5          | 5.5                | 5.5                | 5.6               | 5.6                 | 5.7               | 5.8               | 6.0              | 6.0               | 6.0               | 6.1                 | Query<br>Match Length |
| 324               | 423                  | 7968             | 5712              | 395                 | 377                 | 477                | 212               | 3689              | 424                | 557                | 488                | 434                | 334               | 619              | 514                | 488                | 497               | 511                 | 3655              | 403               | 8695             | 529               | 529               | 224                 |                       |
| 9                 | 7                    | 7                | 7                 | 7                   | 7                   | 7                  | 7                 | 7                 | 7                  | 7                  | 7                  | 7                  | σ                 | 7                | 7                  | თ                  | 7                 | 7                   | 7                 | 7                 | 7                | 6                 | σ                 | 7                   | DB.                   |
| US-10-858-730-113 | US-11-096-568A-25217 | US-11-143-980-49 | US-11-143-980-47  | US-11-087-099-11975 | US-11-087-099-12099 | US-11-087-099-2487 | US-11-212-443-48  | US-11-075-185-4   | US-11-087-099-5604 | US-11-087-099-9168 | US-11-087-099-3033 | US-11-087-099-6812 | US-10-858-730-121 | US-11-205-109-30 | US-11-087-099-1493 | US-10-467-657-2362 | US-11-143-980-61  | US-11-087-099-10617 | US-11-075-185-5   | US-11-205-109-23  | US-11-205-109-15 | US-10-858-730-105 | US-10-858-730-104 | US-11-098-686-10266 | ID                    |
| Sequence 113, App | 2521                 | 49,              | Sequence 47, Appl |                     | Sequence 12099, A   | Sequence 2487, Ap  | Sequence 48, Appl | Sequence 4, Appli | Sequence 5604, Ap  | 916                | Sequence 3033, Ap  | 6812               | Sequence 121, App | 30,              | Sequence 1493, Ap  | Sequence 2362, Ap  | Sequence 61, Appl | Sequence 10617, A   | Sequence 5, Appli | Sequence 23, Appl | 15, A            | Sequence 105, App | Sequence 104, App | Sequence 10266, A   | Description           |

US-10-858-730-104 ; Sequence 104, Application US/10858730 ; Publication No. US20050255566A1

| 100.5 5.1 617 7 US-11-143-980-35 100.5 5.1 232 6 US-10-467-657-3352 100.5 5.1 563 7 US-11-087-099-6896 100 .5.0 542 7 US-11-087-099-4957 99 5.0 471 7 US-11-087-099-12104 99 5.0 483 7 US-11-087-099-3687 99 5.0 483 7 US-11-087-099-3687 98 5 4.9 465 7 US-11-087-099-3768 98 5 4.9 507 6 US-11-087-099-378 98 5 4.9 507 6 US-10-479-873-7 98 5 4.9 578 6 US-10-479-873-8 98 5 4.9 578 6 US-10-479-873-8 98 5 4.9 578 6 US-10-479-109-32 98 6 4.9 415 7 US-11-087-099-3825 98 6 4.9 415 7 US-11-087-099-8192 98 6 4.9 429 7 US-11-087-099-8192 97 6 4.9 324 6 US-10-858-730-120 97 6 4.9 324 6 US-10-858-730-120   | 45                 | 44                | 43              | 42                 | 41               | 40               | 39                 | 38                 | 37                | 36              | 35              | 34                 | ω<br>u             | 32                 | 31                  | 30      | 29                | 28                 | 27                 | 26        |
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| 232 6 US<br>563 7 US<br>542 6 US<br>476 7 US<br>483 7 US<br>573 7 US<br>507 6 US<br>507 6 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 US<br>511 7 | 97                 | 97                | 97.5            | 98                 | 98               | 98               | 98.5               | 98.5               | 98.5              | 98.5            | 98.5            | 98.5               | 99                 | 99                 | 99                  | 99      | 100               | 100.5              | 100.5              | TOT       |
| 7 6 6 6 6 7 7 7 7 6 7 8 8 8 8 8 8 8 8 8   | 4.9                | 4.9               | 4.9             | 4.9                | 4.9              | 4.9              | 4.9                | 4.9                | 4.9               | 4.9             | 4.9             | 4.9                | 5.0                | 5.0                | 5.0                 | 5.0     | . 5.0             | 5.1                | 5.1                | 5.L       |
| US-11-143-98U-35 US-11-087-099-6896 US-10-6858-730-106 US-11-087-099-4957 US-11-087-099-12104 US-11-087-099-12104 US-11-087-099-3687 US-11-087-099-8665 US-10-479-873-7 US-11-087-099-8193 US-10-479-873-8 US-10-479-873-8 US-10-479-873-8 US-10-479-873-8 US-10-479-873-8 US-10-479-873-8 US-11-087-099-3825 US-11-085-730-20 US-11-205-109-20 US-11-205-109-20 US-11-205-109-8132 US-11-087-099-8132 US-11-087-099-8132   | 478                | 324               | 574             | 511                | 429              | 415              | 613                | 595                | 578               | 507             | 507             | 465                | 573                | 483                | 476                 | 471     | 542               | 563                | 232                | 61.       |
| US-11-143-980-35 US-10-467-657-3352 US-10-858-730-106 US-10-858-730-106 US-11-087-099-12104 US-11-087-099-12104 US-11-087-099-3687 US-11-087-099-3665 US-10-479-873-7 US-11-087-099-3655 US-10-479-873-8 US-10-487-657-5796 US-11-087-099-3825 US-10-467-657-5796 US-11-205-109-32 US-11-205-109-32 US-11-205-109-32 US-11-205-109-32 US-11-205-109-32 US-11-205-109-32 US-11-205-109-3120 US-11-205-109-3120 US-11-205-109-3120 US-11-205-109-3120   | 7                  | σ                 | 7               | 7                  | 7                | 7                | თ                  | 7                  | σ                 | σ               | δ               | 7                  | 7                  | 7                  | 7                   | 7       | 6                 | 7                  | 6                  | 7         |
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|   | 1476, A            | 120, Ap           | 2, Appl         | 8192, A            | 32, App          | 20, App          | 5796, A            | 3825, Ap           | 103, Ap           | 8, Appli        | 7, Appli        | 8665, A            | 7597, A            | 3687, A            | 12104,              | 4957, A | 106, Ap           | 6896, A            | 3352, A            | i is, App |

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US-11-098-686-10266
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Sequence 10266, Application US/11098686

Publication No. US20060024696A1

GENERAL INFORMATION:

REPLICANT: KADUT, Vivek and Gebhart, Connie J.

APPLICANT: KADUT, Vivek and Gebhart, Connie J.

TITLE OF INVENTION: NUCLEIC ACID AND POLYPEPTIDE SEQUENCES

TITLE OF INVENTION: PROM LAWSONIA INTRACELLULARIS AND METHODS OF USING

FILLE REFERENCE: 09531-128001

CURRENT APPLICATION NUMBER: US/11/098,686

CURRENT FILING DATE: 2005-04-04

PRIOR APPLICATION NUMBER: DCT/US03/31318

PRIOR APPLICATION NUMBER: US 60/416,395

PRIOR PRIOR DATE: 2002-10-04

PRIOR FILING DATE: 2002-10-04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS: 11433
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 10266
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 224
  191
                                                   194 VVALVLIALGLAEFVAGGLV 213
                                                                                                            134 SVWTYFFLMFSSGIIINFTLAWLNLLPIPPLDGSKILWAILPNELGYKYML---AERYGF 190
                                                                                                                                                       142 VAWWL-----ATVNLLLGLENLLPGAPLDGGRLVRAYLWRRHGDSVRAGIGAARAGR 193
                                                                                                                                                                                                                                                                                                                                18 VPLVLGIILHEVAHGWVAQRRG----DPTAAMLGRITLNPTHHIDPLGLMVFTITSLTSP
                                                                                                                                                                                                                                                                          97 ---GEAK-----TPKAAFRIAFAGPATSLALSATFG-ALAITLAGVRTPAIVIS 141
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VIFIALLLTGLLGYILYPLI 210
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                     APPLICANT: Bailey, Richard B.
APPLICANT: Blomquist, Paul
APPLICANT: Doten, Reed
APPLICANT: Driggers, Edward M.
APPLICANT: Madden, Kevin T.
APPLICANT: O'Leary, Jessica
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Best Local S
Matches 105
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NUMBER OF SEQ ID NOS: 364
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 104
LENGTH: 529
TYPE: PRT
ORGANISM: Mycobacterium tuberculosis
S-10-858-730-104
                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                    Sequence 105, Appublication No.
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    APPLICANT:
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CURRENT FILING DATE: 2004-06-01
PRIOR APPLICATION NUMBER: US 60/475,000
PRIOR FILING DATE: 2003-05-30
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TITLE OF INVENTION: METHODS AND COMPOSITIONS
TITLE OF INVENTION: PRODUCTION
FILE REFERENCE: 14184-030001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: US 60/551,860
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              224 AAYLIAGQDPTALVA--TGIVV-----LLSGMTLVGSMQDAVTGYMLTALARLGDALFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 166 AGFALGVA-MLLGGTWL-TCVLAAVTSGVIDRLGRLLNRIGTPLFFQRVFGAGIATLVAV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11 AGEVVNVHWSVLVILWLETWSLATMLPGTVG-----GYPAVVYWLLGAGGA--VML
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  Driggers, Edward M.
Madden, Kevin T.
O'Leary, Jessica
O'Toole, George
                                                                                                                                                                                                                                                                                                      GVVLGEFLASPLRYGAGRIGDLFRIEGP
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O'Leary, Jessica
O'Toole, George
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Walbridge, Michael J.
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27.1%; Pred. No. 0.098;
tive 32; Mismatches 143; Indels 1
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APPLICANT: Farnet, Chris
APPLICANT: Zazopoullos, Emmanuel
APPLICANT: Staffa, Alfredo
TITLE OF INVENTION: GENE CLUSTER FOR RAMOPLANIN BIOSYNTHESIS
FILE REFERENCE: 3002-2US
CURRENT APPLICATION NUMBER: US/11/205,109
CURRENT FILING DATE: 2005-08-17
PRIOR APPLICATION NUMBER: US/09/976,059
PRIOR APPLICATION NUMBER: US 60/239,924
PRIOR FILING DATE: 2001-10-15
PRIOR FILING DATE: 2000-10-13
INUMBER OF SEQ ID NOS: 46
SOFTWARE: Patentin version 3.0
SEQ ID NO 15
LENGTH: 8695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/10/858,730
CURRENT FILING DATE: 2004-06-01
PRIOR APPLICATION NUMBER: US 60/475,000
PRIOR FILING DATE: 2003-05-30
PRIOR APPLICATION NUMBER: US 60/551,860
PRIOR FILING DATE: 2004-03-10
NUMBER OF SEQ ID NOS: 364
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 105
LENGTH: 529
TYPE: PRT
ORGANISM: Mycobacterium tuberculosis
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                                                                                                                                                                                                                                                                                                                                             Sequence 15, Application US/11205109 Publication No. US20050287641A1
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TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR AMINO ACID TITLE OF INVENTION: PRODUCTION
FILE REFERENCE: 14184-030001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    166 AGFALGVA-MLLGGTWL-TCVLAAVTSGVIDRLGRLLNRIGTFLFFQRVFGAGIATLVAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     224 AAYLIAGQDPTALVA--TGIVV-----LLSGMTLVGSMQDAVTGYMLTALARLGDALFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       105; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11 AGEVVNVHWSVLVILWLETWSLATMLPGTVG------GYPAVVYWLLGAGGA--VML
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60 LASLLAHELAHAVVARRAGVSVESVTLWLFGGVTALGG--EAKTPKAAFRIAFAGPATSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LVALRQLRDVAPSRRSTTSVGDIALPLHSVPTARPQEPLTALLERMAPLGPRSRALVTEG 351
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Walbridge, Michael J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       32; Mismatches 143;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 119; DB 6; Length 529; Pred. No. 0.098;
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405

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334

275

223

Gaps

21

204

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RESULT 5
US-11-205-109-23
JS-11-205-109-23
JS-205-109-23
Sequence 23, Application US/11205109
Publication No. US20050287641A1
GENERAL INFORMATION:
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; TYPE; PRT
; ORGANISM; Actinoplanes sp.
US-11-205-109-23
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; ORGANISM: Actinoplanes
US-11-205-109-15
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                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Zazopoulos, Emmanuel
APPLICANT: Staffa, Alfredo
TITLE OF INVENTION: GENE CLUSTER FOR RAMOPLANIN BIOSYNTHESIS
FILE REFERENCE: 3002-2US
CURRENT APPLICATION NUMBER: US/11/205,109
CURRENT FILLING DATE: 2005-08-17
PRIOR APPLICATION NUMBER: US/09/976,059
                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR FILING DATE: 2001-10-15
PRIOR APPLICATION NUMBER: US 60/239,924
PRIOR FILING DATE: 2000-10-13
NUMBER OF SEQ ID NOS: 46
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APPLICANT: Zazopoulos, 1
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89
                                            68
                                                                                    56
                                                                                                                                29 TWSLATMLPGTVGGYPAVVYWLLGAGGAVMLLASLLAHELAHAVVARRAGVSVESVTLWL 88
                                                                                                                                                                          80; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LIALGLAE -- FVAGGLV---- GGVWLAFIGWFIFAAAREEETRISTOQLFAGVRVADAMT 252
                                       FGGVTALGGEAKTPKAAFRIAFAGPATSLALSATFGALAITLAGVRTPAIVISVAWWLAT 148
                                                                                      SWGLA--
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                --RSRALVTEGSAVVGIVTP----SDVARLIDVYRL 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GYVVPAAGEPEPDPAAVRAHVAAQLPAYMVPSAVVVLPDLPLTANGKLDRKALPAPDYGA 5189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TSVGDIA-----LPLHSVPTA---RPQEPLTA--LLERMAPLGP----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADPFGRGERMYRTGDRVRWTRGGS-LEFLG----RVDDQVKIRGFRIE----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EALPPALAGRMAAAGRGVTNLYGPTEVTVWATVADLGASPAGPVPIGTPLRNTRAFVLDD 5018
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-AGLTIAAGAVVTAAVLHMPAEPGPAMALALA-----
                                                                                                                                                                     5.8%; Score 115; DB 7; Length 403;
20.5%; Pred. No. 0.14;
ative 39; Mismatches 135; Indels 1
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                                                                                                                                                                            Indels 136;
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APPLICANT: JULIEN, BRYAN
APPLICANT: RALPH
TITLE OF INVENTION. BIOSYNTHETIC GENE CLUSTER FOR AMBRUTICINS
FILE REFERENCE: 010099.03
CURRENT APPLICATION NUMBER: US/11/075,185
CURRENT FILING DATE: 2005-03-07
PRIOR APPLICATION NUMBER: US 60/551,103
PRIOR APPLICATION NUMBER: US 60/551,103
PRIOR APPLICATION NUMBER: US 60/568,290
PRIOR APPLICATION NUMBER: US 60/568,290
PRIOR APPLICATION NUMBER: US 60/568,290
PRIOR FILING DATE: 2004-05-04
NUMBER OF SEQ ID NOS: 61
SOFTWARE: Patentin version 3.3
SEQ ID NO 5
LENGTH: 3655
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 5.7%; Score 112.5; DB 7; Best Local Similarity 21.9%; Pred. No. 3.1; Matches 110; Conservative 44; Mismatches 144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 5, Application US/11075185
Publication No. US20050266434A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT ORGANISM: Sorangium cellulosum
                                                                                                                                                                            1570
                                                                                      1626
                                                                                                                                                                                                                                                                     1535
                                                                                                                                                                                                                                                                                                                                                            1475
  1685 GRRAASPAAAATGAAALRAKLSALPEAEKAGALLELVRAEAAAVLQLAGPÄQVPADKPLK 1744
                                                                                                                                                                                                                         201 ALGLAEFVAG----
                                                                                                                                                                                                                                                                                                               149 VNLLLGLFNLLPGAPLDGGRLVRAYLWRRHGDSVRAGIGAARAGRVVALVLI-----
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                                                                                                                                                                                                                                                                                                                                                                                                        99 AKTPKAA-FRIAFAGPATSLALSATFGAL-----AITLAGVRTPAIVISV-AWWLAT 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51 LGAGGAVMLLAS------LLAHELAHAVVARRAGVSVESVTLWLFGGVTALGGE 98
                                                                                                                                                                                                                                                                                                                                                            LRAAGAATVDVAACDVADGAALGAVIAAIPAAHPLTAVVHMAGVLDDVIVTKLSAEQLAR 1534
                                                                                                                                                                                                                                                                                                                                                                                                                                                    LDPGGTVLITGGTGELGRQVARHLVAAHGVRHLVLTSRRGMDAPD-----AAALVDE
                                          -----ALRQLRDVA--PSRRSTT 309
                                                                                        RQGIAPIALAQGMQLLDRALARPEAALVPAALDL-SALQRAASDAGQVPALLRGLVRPAA 168
                                                                                                                                ETRISTOOLFAGVRVADAMTAOPHTA--PGWINVEDFIOR--------
                                                                                                                                                                            SAGQANYAAANAFLDALAAQLRARGVPAMSLAWGFWEQAGLGMTAHLG----AADLARLR 1625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RIVREALTNVARHAPHAPNVTVTVTVEQAD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----ELHDVVAHHITGMILQTQAAQVLARRDAGRVPERLAVIETAGTEALAAMRRVVGL 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGLVGGVWLAFIGWF-----IFAAAREBETRISTQQLFAGVRVADAMTAQPHT 257
                                                                                                                                                                                                                                                                        V-----LRP--KIDGG-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -AGPAPVTWLNILTWLGGTATGLSLRTVDGRARANAERIRQEERLELAR------
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                                                                                                                                                                                                                         ----GLVGGVW------LAFIGWFIFAA--AREE 232
                                                                                                                                                                                                                                                                     -WHL-----AAATRGHRLAAFVLFSSAAGTLG 1569
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Gaps

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GENERAL INFORMATION:
APPLICANT: He, Min
APPLICANT: Hucul, Jo
APPLICANT: Haltli, E
APPLICANT: Wagenaar,
APPLICANT: Graziani,
                                                                                                                     RESULT 8
US-11-143-980-61
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US-11-087-099-10617
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; ORGANISM: Torenia hybrida
US-11-087-099-10617
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                                                                                         Sequence 61, Application US/11143980 Publication No. US20050272133A1
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LENGTH: 511
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TITLE OF INVENTION: Genes and Uses for Plant
FILE REFERENCE: 38-21 (53450) B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
NUMBER OF SEQ ID NOS: 12464
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          h 5.6%; Score 112; DB 7; Length 511; Similarity 24.9%; Pred. No. 0.32;
 Hucul, John
Haltli, Bradley A.
Wagenaar, Melissa M.
Graziani, Edmund
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                                                                                                                                                                                                              PLTALLERMAPLGPRSRALVTEGSAVVG---IVTPSDVARLIDVYRLAQPEPTFTTSP
                                                                                                                                                                                                                                              KLITRMLEQHEASAHKPDFLDAIIAASLDDYSSEEERLSTSNIKALLLNLFTAGTDTSSS
                                                                                                                                                                                                                                                                            -----RRSTTSVGDIALPLHSVPTARPQE 328
                                                                                                                                                                                                                                                                                                         - VNEFKDMVVELMTSAGYFNIGDFV-----PILAWMDLQGIERGMKALHKKFD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                           ITLA--GVRTPAIVISVAWWLATVNLLLGLFNL--LPGAPLDGGRLVRAYLWRRHGDSVR 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AKKYGPVMYLKTGTLGMVVASTPSSARAFLKTLDSNFSNRPANAG-ATHLA----YGAQD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ARRAG--VSVESVTLWLFGGVTALGGEA--KTPKAAF--RIAFAGPATSLALSATFGALA 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VLVVYILVSKSLSTIIVVSRKRLPPGPTGFPVV-----GALPLLGSM--PHVALAKM
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US-10-467-657-2362
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 FILE REFERENCE:
CURRENT APPLICATION NUMBER: US/10/467,657
CURRENT FILING DATE: 2003-08-11
PRIOR APPLICATION NUMBER: GB-0103424.8
PRIOR FILING DATE: 2001-02-12
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APPLICANT: CHIRON SPA
APPLICANT: FONTANA MARIA Rita
APPLICANT: PIZZA MARIAGIRZIA
APPLICANT: MASIGNANI Vega
APPLICANT: MONACI Elisabetta
TITLE OF INVENTION: GONOCOCCAL PI
                                                                                                                                                                                       Sequence 2362, Application US/10467657 Publication No. US20050260581A1 GENERAL INFORMATION:
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SEQ ID NO 61
LENGTH: 497
TYPE: PRT
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TITLE OF INVENTION: Biosynthetic Gene Cluster for the Production of a Complex
TITLE OF INVENTION: Biosynthetic Gene Cluster for the Production of a Complex
TITLE OF INVENTION: Polyketide
FILE REFERENCE: AM-101426US
CURRENT APPLICATION NUMBER: US/11/143,980
CURRENT FILING DATE: 2005-06-03
PRIOR APPLICATION NUMBER: US 60/664,483
PRIOR APPLICATION NUMBER: US 60/576,895
PRIOR APPLICATION NUMBER: US 60/576,895
PRIOR APPLICATION NUMBER: US 60/576,895
PRIOR APPLICATION DATE: 2004-06-03
NUMBER: OF SEQ ID NOS: 72
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107; Conserv
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Kulowski, Kerry
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         PROTEINS AND
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; Sequence 1493, Application US/11087099
; Publication No. US20060041961A1
; GENERAL INFORMATION:
APPLICANT: Abad, Mark S. et al.
TITLE OF INVENTION: Genes and Uses for Plant Improvement
FILE REFERENCE: 38-21(53450)B EP
CURRENT APPLICATION UNMBER: US/11/087,099
; CURRENT FILING DATE: 2005-03-22
; NUMBER OF SEQ ID NOS: 12464
; SEQ ID NO 1493
; SEQ ID NO 1493
; LENGTH: 514
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US-11-087-099-1493
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US-10-467-657-2362
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SOFTWARE: SEQWIN99, VETBION 1.04
SEQ ID NO 2362
LENGTH: 488
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Best Local Similarity
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Best Local Similarity
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                                                                                                                                               132 LAASVVSVGWS------EYAGDLLALPTTVTLAGLPVNLGAV-------
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DPANWTPFIPPAQPAAADTTGVSDATLTHVLFGLEPTSFGPWGVVAAASVVFFSFIG-FD
                                                                       AIAVLLGLVGML-GAKLSG-------RVTAVVVAIKVG--IVLFIIAVGAAYV
                                                                                                           TVNLLLGLFNLLPGAPLDGGRLVRAYLWRRHGDSVRAGIGAARAGRVVALVLIALGLA--
                                                                                                                                                                                 ---GVTALGGEAKTPKAAFRIAFAGPATSLALSATFGALAITLAGVRTPAIVISVAWWLA
                                                                                                                                                                                                                     PAIVLSFL-AAGAVCALAAMCYAEFASTVPVAGSAYTFGYATLGEFVAWIIGWDLILEFT
                                                                                                                                                                                                                                                     PAVVYWLLGAGGAVMLLASLLAHELAHAVVARRAGVSVESVTL-----WLFG-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GFMSKGGVLDYAGGTV-VHINAGIAGLVAALVLGRRIGYGREAMPPHNMAMTLIGAAMLW
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAPTVPEPVFMFFQMTFAIISTAIITGAFAERMKYSAMMLFSGIWFLLVYVPGAHWVWGG
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                                                                                                                                                                                                                                                                                          Conservative
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21.2%; Pred. No. 0.55;
ative 46; Mismatches 126; Indels 1
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                                   ----EFVAGGLVGG---VWLAFIGWFI
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RESULT 12
US-10-858-730-121
; Sequence 121, App
; Publication No. 1
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Farnet, Chris
APPLICANT: Zazopoulos, Emmanuel
APPLICANT: Staffa, Alfredo
TITLE OF INVENTION: GENE CLUSTER FOR RAMOPLANIN BIOSYNTHESIS
FILE REFERENCE: 3002-2US
CURRENT APPLICATION NUMBER: US/11/205,109
CURRENT FILING DATE: 2005-08-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: US 60/239,924
PRIOR FILING DATE: 2000-10-13
NUMBER OF SEQ ID NOS: 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: US/09/976,059 PRIOR FILING DATE: 2001-10-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OTHER INFORMATION: V represents a non-standard initiator codon. It is expected OTHER INFORMATION: the biosynthesized protein will have a formylmethionine resident other information: at this position
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
NAME/KEY: misc_feature
LOCATION: (1)...(1)
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ORGANISM: Actinoplanes
                                                                                                                            301 AAGGSWTALAADRLATQIGWW
                                                                                                                                                                212 LVGGVWLAF-----IGWF 224
                                                                                                                                                                                                                                                  161
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                                                                                                                                                                                                                                                                                                                               115 TSLALSA-----TFGALAIT-LAG--VRTPAIVISVAWWLA---TVNLLLGL-FNLLP 160
                                                                                                                                                                                                                                                                                                                                                                          140 GLAAAGLFA---TTPIVSSMFGHSMEDGALTLCLVLAADAFGA-AVTRGSPARLALAGAW
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                                                                                                                                                                                                                                                GAP---LDGGRLVRAY--LWRRHGDSVRAGI---GAARAGRVVALVLIALGLAEFVAGG- 211
                                                                                                                                                                                                                                                                                        IGLGFQAKMQAWLVLPALVVTYLAGAPVRARARVVHVAAAVAATLAVSLLWVLALTLLP
                                                                                                                                                                                                                                                                                                                                                                                                                   VMLLASLLAHELAHAVVARRAGVSVE--SVTLWLFGGVTALGGEAKTPKAAFRIAFAGPA 114
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Application US/10858730 o. US20050255568A1

GENERAL INFORMATION:

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Sequence 6812, Application US/11087099

Publication No. US20060041961A1

GENERAL INFORMATION:
APPLICANT: Abad, Mark S. et al.
TITLE OF INVENTION: Genes and Uses for Plant Implication Number: US/11/087,099
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
NUMBER OF SEQ ID NOS: 12464
SEQ ID NO 6812
LENGTH: 434
TYPE: PRT
ORGANISM: Mycobacterium tuberculosis H37Rv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: US 60/551,860
PRIOR FILING DATE: 2004-03-10
NUMBER OF SEQ ID NOS: 364
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 121
LENGTH: 334
TYPE: PRT
ORGANISM: Streptomyces coelicolor
US-11-087-099-6812
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Best Local
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APPLICANT: Walbridge, Michael J.
APPLICANT: Yorgey, Peter S.
TITLE OF INVENTION: METHODS AND COMPOSITIONS
TITLE OF INVENTION: PRODUCTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILE REFERENCE: 14184-030001
CURRENT APPLICATION NUMBER: US/10/858,730
CURRENT FILING DATE: 2004-06-01
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Blomquist, Pau
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O'Toole, George
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Madden, Kevin
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24.3%; Pred. No. 0.51;
tive 32; Mismatches
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; LENGTH: 488
; TYPE: PRT
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Best Local S
Matches 89
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APPLICANT: Abad, Mark S. et al.
APPLICANT: Abad, Mark S. et al.
TITLE OF INVENTION: Genes and Uses for Plant Improvement
FILE REFERENCE: 38-21(53450)B EP
CURRENT FILLING DATE: 2005-03-22
CURRENT FILLING DATE: 2005-03-22
NUMBER OF SEQ ID NOS: 12464
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                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Rhodococcus erythropolis
                                                                                                                                                                                                                                                                                                              Local Similarity
215
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                              198 VLIALGLAEFVAGGLVGGVWLA--FIGWFIFAA-----
                                                                                                          138 IVISVAWWLATVNLLLGLFNLLPGAPLDGGRLVRAYLWRRHGDSVRAGIGAARAGRVVAL 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            325 CVIMAWVSPATVFVFLLNSSGAVILFVYLL 354
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     184 AGIGAARAGRVVALVLIALGLAEFVAGGLVGGVWLAFIGWFIFAAAREEETRISTQQLFA 243
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                                                                                                                                                152 GITDGWWVYLAVYAI-----
                                                                                                                                                                                   87
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                                                                                                                                                                                                                                                        32 LATMLPGTVGGYP----AVVYWLLGAGGAVMLLASLLAHELAHAVVARRAGVSVESVTL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         67
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                                                                                                                                                                                                                      MSSALPAAGGGYTFARRAMGPW----GGFATGTAILIEYSIAPAAIATFIGAYVESLNLF 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EFWFAGVKVATIV-----GFLVLGTAFAFGLLPGHGMDFSNL-----SAHGGFFP 175
DTSAVGSSSFLPFGLL-GIWAAVPFAIWFFLAVEGVPLAAEEAREPEKNV
                                                                                                                                                                               -----WLFGGVTALGGEAKTPKAAFRIAFAG---PATSLALSATFGALAITLAGVRTPA 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LSCLNSGLYTAS-----RMLFVLAARQEAP--AQLVKVNRRGVPTFAIM--GSSVVGFL 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TVVARIVIFFVGSVFLLTVILPWNSLELGASPYVAALRHMGIGGADO---IMNAVVLTAV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LGGWAGF--SVGW----LYWYF-WVIVVGFEAVAGG-KVLTYWI-----
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                                                                                                                                                                                                                                                                                                                Score 104.5; | Pred. No. 1.1;
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                                  AREEETRI 236
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US-11-087-099-9168
: Sequence 9168, Application US/11087099
; Publication No. US20060041961A1
; GENERAL INFORMATION:
APPLICANT: Abad, Mark S. et al.
TITLE OF INVENTION: Genes and Uses for Plant Improvement;
FILE REFERENCE: 38-21(53450)B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
NUMBER OF SEQ ID NOS: 12464
; SEQ ID NO 9168
; SEQ ID NO 9168
; LENGTH: 557
; TYPE: PRT
CORGANISM: Thermoplasma acidophilum
US-11-087-099-9168
Search completed: March 23, 2006, 06:29:39 Job time: 11.431 secs
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                                                                                       263 VVFIGQVNWAAVGVAPGQWSALSGGVVTAPFATLASSAGLVFLSYFLFADA 313
                                                                                                                            200 -IALGLAEFVAGGLVGGVW-------LAFIGWFIFAAA 229
                                                                                                                                                                                                                    163 PLDG-----GRLVRAYLWRR----HGDSVRAGIGAARAGRVVALVL----- 199
                                                                                                                                                                           203 VTYGWSSVFEAISVSGIVFSYLGFROALDYGGEAKNPORSVPIATILSVVIGIALYALLO
                                                                                                                                                                                                                                                              143 ILLAAILMLGFFFLNYFGIKVMGKTNTGMTWWKLIIPSATVALLLTVHFNIGNFFLKTGF 202
                                                                                                                                                                                                                                                                                                         133 VRTPAIVI------SVAWW------LATVNLLIGLENLLPGA 162
                                                                                                                                                                                                                                                                                                                                                  93 HGGLAGFLFGWAYFLSAVSVPAIEAEGV-----ITYAGTYVKGLVTPT-GVL--TAVG 142
                                                                                                                                                                                                                                                                                                                                                                                                                                     39 WLFAAAGASMLAGPA----AVLSWII--GGLIVLVIALVYAELGGMIPRSGAIVRYGQYS
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2: geneseqp1990
3: geneseqp2000
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1 MASSASDGTHERSA
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and Pred. No. is derived is the number of results predicted by chance to have a ater than or equal to the score of the result being printed, rived by analysis of the total score distribution.

## SUMMARIES

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| Result<br>No. | Score | Query<br>Match | Length | ВB | ID       |                    |
|---------------|-------|----------------|--------|----|----------|--------------------|
| ۲             | 2195  | 100.0          | 413    | 8  | ADI37308 | Adi37308 M. tuberc |
| 2             | 148   | 6.7            | 346    | ω  | AAG20855 | 20855 Ara          |
| ω             | 148   | 6.7            | 353    | ω  | AAG20854 | Aag20854 Arabidops |
| 4             | 148   | 6.7            | 356    | w  | AAG20853 |                    |
| v             | 146.5 | 6.7            | 369    | 8  | ADX77895 | Adx77895 Plant ful |
| 6             | 146.5 | 6.7            | 369    | 8  | ADX68280 | Adx68280 Plant ful |
| 7             | 130   | 5.9            | 172    | 9  | ABM92392 | M. xan             |
| 8             | 126   | 5.7            | 582    | 7  | ADC52136 | Aer                |
| 9             | 121   | 5.5            | 338    | 4  | ABB67066 | Abb67066 Drosophil |
| 10            | 118.5 | 5.4            | 322    | œ  | ADT59525 | Adt59525 Plant pol |
| 11            | 117.5 | 5.4            | 889    | 7  | AB060724 | Abo60724 Klebsiell |
| 12            | 112.5 | 5.1            | 409    | 7  | ABO71490 | Abo71490 Pseudomon |
| 13            | 112   | 5.1            | 574    | σ  | ABU34102 | Abu34102 Protein e |
| 14            | 109.5 | 5.0            | 1127   | 7  | AB078103 |                    |
| 15            | 106.5 | 4.9            | 691    | ហ  | ABG61612 | Abg61612 Human DPR |
| 16            | 106   | 4.8            | 452    | 8  | ADY04294 |                    |
| 17            | 105   | 4.8            | 343    | 4  | AAU49953 |                    |
| 18            | 105   | 4.8            | 343    | σ  | ABM46472 | Abm46472 Propionib |
| 19            | 104.5 | 4.8            | 742    | 8  | ADS27327 | Ads27327 Bacterial |
| 20            | 104.5 | 4.8            | 742    | 8  | ADS26598 | Ads26598 Bacterial |
| 21            | 104.5 | 4.8            | 742    | 8  | ADS26973 | Ads26973 Bacterial |
| 22            | 102.5 | 4.7            | 4635   | 8  | ADX56098 | Adx56098 Streptomy |
| 23            | 102   | 4.6            | 563    | 7  | ABO68803 | Abo68803 Pseudomon |
| 24            | 101   | 4.6            | 518    | 8  | ADT50839 | Adt50839 Cancer re |
|               |       |                |        |    |          |                    |

The present invention describes polypeptides or their fragments, which are expressed during the latent stage of a mycobacterial infection, and/or nucleic acids encoding the polypeptides, which are useful for creating a therapeutic vaccine against tuberculosis. Also described: (1) a therapeutic vaccine against tuberculosis comprising one or more polypeptides; (2) a method for treating an animal, including a human being, with tuberculosis caused by virulent mycobacteria, e.g. by Mycobacterium tuberculosis, M. africanum or M. bovis; (3) a method for immunising an animal, including a human being, against tuberculosis

Use of one or more polypeptides or their fragments, which are expressed during the latent stage of the mycobacterial infection, and/or nucleic acids encoding the polypeptides, for a therapeutic vaccine against tuberculosis.

N-PSDB;

ADI37353.

Claim 3; SEQ ID NO 29; 76pp; English.

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| 98 99<br>98 99<br>98 99<br>98 59<br>99 99 99 99 99 99 99 99 99 99 99 99 99  | 100.5<br>100.5<br>100<br>100<br>99.5   |
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| 000000000000000000000000000000000000000   | Aeb03469 Mycobacte Aea79372 Novel M. Ads95064 Human the Adv67921 Biologica Adv06484 Plant ful Abm87613 M. xanthu |

### ALIGNMENTS

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RESULT 1
AD1373
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XX MYCO
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ID AAG27
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Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter; termination sequence.
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l Similarity 27.7%;
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                                                              entry)
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8; Mismatches 133
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                                                                                       NHRVFERISQEVAAGLEFYGNRRWLEKPSGFFAQPPPLTEVAVRKVKDRRRSFYR--IFF
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                    The invention describes a recombinant DNA construct comprising a polynucleotide consisting of a sequence encoding an amino acid sequence available in electronic form from the US patent office at ftp.seqdata.uspto.gov/sequence.html?DocID:2004034888. The polynucleotide of the invention are also useful in physical arrays of molecules and as plant breeding markers. The recombinant DNA construct is useful for improving plant tolerance to cold, heat, drought, herbicides, extreme osmotic conditions, pathogens or pests, for manipulating growth rate in plant cells by modification of the cell cycle pathway, for conferring increased resistance to plant disease, for producing galactomannan, lignin or plant growth regulators, for increasing the rate of homologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               plant protectant; plant growth regulant; gene therapy; plant; recombinant DNA construct; physical array; plant breeding marker; cold tolerance; heat tolerance; drought tolerance; herbicide tolerance; extreme osmotic condition; pathogen tolerance; pest tolerance; growth rate; cell cycle pathway; disease resistance; galactomannan production; lignin production; plant growth regulator; yield; plant growth; plant development; seed oil; protein yield;
                                                                                                                                                                                                                                                                                                                                                                 Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                        New recombinant DNA construct, useful for improving plant tolerance to cold, heat, drought, herbicides, extreme osmotic conditions, pathogens pests, for conferring increased resistance to plant disease, or for
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SCREEN S E.
TABASKA J E.
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for producing galactomannan, increasing the rate of homologous yield by modification of
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RESULT 6
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                                                                                                                                                                                                                                                                                                  growth rate; cell cycle pathway; disease resigalactomannan production; lignin production; yield; plant growth; plant development; seed
                                                                                                                                                                                                                                                                                                                                     plant protectant; plant growth regulant; gene therapy; plant preceding marker; recombinant DNA construct; physical array; plant breeding marker; cold tolerance; heat tolerance; drought tolerance; herbicide tolerance; extreme osmotic condition; pathogen tolerance; pest tolerance;
                                                       Liu
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05-NOV-2001;
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                                 WPI; 2004-180133/17
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                                                                                        KOVALIC D K.
SCREEN S E.
TABASKA J E.
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                                                       Zhou
                                                                                                                           DOHZ
                                                                                                                                                                                                                                                                                          content.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                    standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SQEEESLIGLNGLSLGGYIASLVASLE---
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24.6%;
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Pred. No. 4.8
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                                                                                                                                                                                                                                                                                                                  regulator;
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New recombinant DNA construct, useful cold, heat, drought, herbicides, extre

seful for improving plant tolerance
extreme osmotic conditions, pathoge

pathogens

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RESULT 7
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          pests, for improving
                                   Goldman
                                                                                                                                               10-JUL-2000;
                                                                                                                                                                                                    10-JUL-2001;
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                                                                                                                                                                                                                                                                                                                      US6833447-B1
                                                                                                                                                                                                                                                                                                                                                                               Myxococcus xanthus.
                                                                                                                                                                                                                                                                                                                                                                                                                                    Transgenic plant; DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      02-JUN-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABM92392 standard; protein; 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          available in electronic form from the US patent office at ftp.seqdata.uspto.gov/sequence.html?DocID:2004034888. The polynucleotide of the invention are also useful in physical arrays of molecules and as
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                                                                                         (MONS ) MONSANTO TECHNOLOGY LLC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       xanthus protein sequence, seq id 11591.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         341
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PGRFIYAGIADRLVHPREQVTRLWEHWGKPEIVWYPGGHTG--FFQSRPVRRFVQAALEQ 398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RKDAAVLTQDVTLLAEDAAQKSGITIEQVR------DRLRSVLSLTDVTRFPVPKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       --ACAILGVPVADLIELLGRHCGLRHKDPRRHTVKMAEPIGRMISPLSLT-----PLVPM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NEAGYGKMGICGLSMGGVHAAMVGSLHPTPVATLPFLAPHSAVVPFCEGVYKYATAWDAL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NIATMVLESPYYGQRRPSMQRGAKLQCVSDLLLLGKATIDEA-----RSLLYWLQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NIVMPVL--PMHGPRGQGLPKGA-----VFPGEDVLDDVHGTAQAVWDIRRLLSWIR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQ ID NO 39123; 15pp; English
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                                                                                                                                               2000US-0217883P
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                                Hinkle GJ,
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                                                                                                                                                                                                                                                                                                                                                                                                                                 replication; gene regulation;
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                                Slater SC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 146.5; DB 8
Pred. No. 4.8e-06;
%1; Mismatches 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                   Wiegand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NA construct comprising encoding an amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          81;
                                   RC
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                                                                                                                                                                                                                                                                                                                                                                                                                                    gene expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                69;
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                                                                                                                                                                                                                                                                                                                                                                              recombinant DNA construct for expression of a nitrite reductase gene in a plant cell, and a plant cell comprising the recombinant DNA construct. The mucleic acid is useful for determining gene expression, identifying mutations in a gene of interest, and for constructing mutations in a gene of interest. Sequences given in records for SEQ IDS 9692-16825 represent a group of 7134 Mxyococcus xanthus proteins and peptides. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from USPTO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New substantially purified Myxococcus xanthus nucleic acid molecule encoding a nitrite reductase, useful for determining gene expression, identifying mutations in a gene of interest, and for constructing
                                                                                                                                                                                                                                                                                                                                           Sequence 172 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The invention relates to a substantially purified nucleic acid molecule encoding a nitrite reductase of SEQ ID NO. 11926. Further disclosed is a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 2; SEQ ID NO 11591; 25pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                identifying mutations in a gene of interest, mutations in a gene of interest.
                                                                                                                                                                                                                                                  Local Similarity
les 45; Conserv
                                     360 VTRĻWEHWGKPEIVWYPGGH-TGFFQSR 386
                                                                                                                            303
                                                                                                                                                                                                            248 DIRRLISWIRSQEEESLIGLNGLSLGGYIASLVAS-LEEGLACAILGV---PVADLIE-L
                                                                                    67
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TLALHAHWPRSELRWVDAGHVTALFTER 154
                                                                                                                                                                    EARALLAWLRS-EGHARLGVAGYSMGGYMAALTAAVVPEPLAVAALAAGASPVPVFTQGL
                                                                                                                          LGRHCGLRHKD-PRRHTVKMAEPIGRMISPLSLTPLVP--MPGRFIYAGIADRLVHPREQ 359
                                                                                LSWSTAFALLDGPRRDAEQARSRLGRIFDLANLARFPPPRQPEAAVLVACRRDGFVPGDE
                                                                                                                                                                                                                                                      5.9%;
ilarity 30.4%;
Conservative 2
                                                                                                                                                                                                                                                      21;
                                                                                                                                                                                                                                                      Score 130; DB 9; I
Pred. No. 8.7e-05;
11; Mismatches 72;
                                                                                                                                                                                                                                                                                              Length 172;
                                                                                                                                                                                                                                                        Indels
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RESULT 8
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XX The present sequence is a hyperthermophilic esterase pernix, which has peptidase and esterase activity at Claim 4; SEQ ID NO 2; 10pp; Japanese. Hyperthermophilic esterase, a polynucleotide, recombinant vector, a transformant, preparation 28-FEB-2001; 2001JP-00054949 28-FEB-2001; 2001JP-00054949 JP2002253244-A Enzyme; hyperthermophilic esterase; peptidase; esterase; 18-DEC-2003 ADC52136 standard; protein; WPI; 2003-460507/44. 10-SEP-2002 Aeropyrum pernix. Aeropyrum pernix hyperthermophilic esterase, (DOKU-) DOKURITSU GYOSEI HOJIN SANGYO GIJUTSU use of the (first entry) a transformant, preparation of the hyperthermophilic hyperthermophilic esterase. SEQ 뒴 (I) from Aeropyrumtemperature rang ester.

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RESULT 9
ABB670666
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                         Disclosure; SEQ ID
                                                               New isolated nucleic a
                                                                                                      N-PSDB;
                                                                                                                  WPI; 2001-656860/75
                                                                                                                                           Venter JC, Adams M,
                                                                                                                                                                                              23-MAR-2000;
11-JUL-2000;
                                                                                                                                                                                                                                   23-MAR-2001; 2001WO-US009231.
                                                                                                                                                                                                                                                                                       WO200171042-A2
                                                                                                                                                                                                                                                                                                              Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                         pharmaceutical
                                                                                                                                                                                                                                                                                                                                                       Drosophila;
                                                                                                                                                                                                                                                                                                                                                                               Drosophila melanogaster polypeptide SEQ ID NO 27990
                                                                                                                                                                                                                                                                                                                                                                                                          26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                    ABB67066;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABB67066 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 582
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96
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                                                                                                                                                                       PE
                                                                                                      ABL11169
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VWVESFDGSRVPTYVLESGRAPTPGPTVVLVHGGPFAEDSDSWDTFAASLA--AAGFHVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SREIMRSRSPINHVDRIKEPLA-LIHPQNDSRTPLKPL 532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ASELY IMGY SYGGYMTLCALTMKPGLFKAGVAGAS VVDWEEMYELSDAAFRNFIEQLTGG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -WLSYTANNREYALLL---RHPEPRPWLVCVHGTEMGRAPLDLAVFRAWKLHDELGLNIV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTWLGYL---PDGRLAV-----VARREGRSAVFIDGERVEAPQGNHGRVVLWRGKLVT
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                                                                                                                                                                       CORP NY
                                                                                                                                                                                                                                                                                                                                                      developmental biology;
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                                                                                                                                                                                              2000US-0191637P.
2000US-00614150.
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25.4%;
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a and
                        27990; 21pp + Sequence Listing; English
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                                                                                                                                            PWD,
                                                               detection reagent for detecting 1000 or more for elucidating cell signaling and cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            36;
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Pred. No. 0.0013;
36; Mismatches 130;
                                                                                                                                            Myers EW
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The invention relates to an isolated nucleic acid detection reagent

New recombinant DNA constructs useful in the field of biochemistry genetics, and in particular for producing transgenic plants with imbiological characteristics.

improved

WPI; 2004-757369/74

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            plant; transgenic; cold tolerance; growth rate; drought tolerance; disease resistance; galactomannan production; plant growth regulat heat tolerance; herbicide tolerance; lighin production; extreme osmotic condition tolerance; pathogens resistance;
                                                                                                                                                                                                                                                                                           28-APR-2003;
28-APR-2003;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94 HAFWVTQPEERSKSSPTLLYFHGNAGNMGH-----RMQNVWGIYHHLHCNVLMVEY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       68;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PGGSHNDTWIVDGYYQA--IGGFL-AELQQQPLLKAP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----SLTPLVPMPGRFIY-AGIADRLVHPR------EQVTRLWEHWGKPEIVWY 375
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2003US-00425115
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Pred. No. 0.002;
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                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 57; Conser
Klebsiella pneumoniae polypeptide segid 7241
                              29-JUL-2004
                                                            ABO60724;
                                                                                      ABO60724 standard; protein; 889
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                                                                                                                                                                                                                                                                                                                                                                           208 NIVMPVL--PMHGPRGQGLPKGA------VFPGEDVLDDVHGTAQAVWDIRRLLSWIR 257
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                                                                                                                                                                                           PREQVIRLWEHWGKPEIVWYPGGHTGFF--QSRPVRRFVQAALEQ
                                                                                                                                                                                                                            EALREDAAALAKDATSLTEDAASGITIEQVXRQIT-
                                                                                                                                                                                                                                                       -GLRH-----KDPRRHTVKMA-----EPIGRMISPLSLTPLVPMPGRFIYAGIADRLVH 355
                                                                                                                                                                                                                                                                                     AEPGYGKMGICGLSMGGVHAAMAGSL---LSTPIPTLPFLAPHSAVVPFCEGLYRHATAW
                                                                                                                                                                                                                                                                                                                                              NIATMVLESPYYGQRRPSMQHGAKLQCVSDLLLLGKATIDDA-----RSLLYWLQ 179
                                                                                                                                                                 PRHSVMELQKAWPGSEVRWVTGGHVSSFLLHNDSFRKAIVDALDR 321
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                              (first entry)
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Pred. No. 0.0034;
Premarches 76; Indels 67;
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 889 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The invention describes a new isolated nucleic acid encoding a Klebsiella pneumoniae polypeptide. Also described are: a recombinant expression vector comprising the nucleic acid, operably linked to a transcription regulatory element; and a cell comprising the recombinant expression vector. The nucleic acid is useful for preparing a vaccine composition against Klebsiella pneumoniae. This is the amino acid sequence of a Klebsiella pneumoniae polypeptide of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New nucleic acid encoding a Klebsiella pneumoniae polypeptide, useful preparing a vaccine composition against Klebsiella pneumoniae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-PSDB; ACH94275
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Recombinant expression vector; transcription regulatory element; Klebsiella pneumoniae protein; antibacterial; Vaccine.
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592
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                                                                                                                                                                                                                                                                                                                                                               125 RKVKDRRRSFYRIFFDSGFTPHPGEPGSQRWLSYTANNREYALLLRHPEPRPWLVCVHGT 184
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GRILVGTQVLEQSLDIDA
                                                             EAQQTYLDLASRAVEAGCETGLLHSRFTPQHRNRHEQRW----VALY--GRAGWPQRKQC 591
                                                                                                                                                                                                --ILDEVHTYDLYTGTILNALVEFLRQIDCTVIILSATLSQTRRDALLQQSTTSEAYPLI 479
                                                                                                                                                                                                                                                                                                                                                                                                                              GL-----KARRPVSNHRVFERISQEVAAGLEFYGNRRWLEKPSGFFAQPPPLTEVAV 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PVITAALNNAGFIKPVIRQGL----SFADVFFPDDPSKKP----REAQSRFIDQVVGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PVLSGAMG-----PFMHTGLYVAQSWRD-YLGQQPDKLPIARPTIALAAQAFRDEIVLL 72
                             RRFV--QAALEQSGLLDA 404
                                                                                                                               TAAPSAERERGLVEIGVPVTENTTVILHSC--RKDEPAREEALRRAELGQQVLWIENTIA
                                                                                                                                                                SLVASLEEGLACAILGVPVADLIELLGRHCGLRHKDPRRHTVKMAEPIGRMISPLSLT--
                                                                                                                                                                                                                               EDVLDDVH-----GT-AQAVWDIRR------LLSWIRSQ-EEESLIGLNGLSLGGYIA
                                                                                                                                                                                                                                                              EMGE---EGSPGGAWFNHRKRGLLAPFAVGTIDQALMAVMNVKHGFVRAYGLAGKVV---
                                                                                                                                                                                                                                                                                               EMGRAPLDLAVFRAWKLHDELGL------NIVMPVLPM-HG-PRGQGLPKGAVFPG
                                                                                                                                                                                                                                                                                                                                                                                               GLYILEAQMGMGKTEAALYAAYQMLVQEKATGI-----YFALPTQLTS---
                                                                                              ----PLVPMPGRFIYAGIADRLVHPR---EQVTRLWEHWGKPEIVWYPGGHTGFFQSRPV 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Osborne M;
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22.8%;
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609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 117.5; DB Pred. No. 0.018;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  158;
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RESULT 12
ABO71490
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                                                                                                                                                                                                                                                  Matches
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Best Local
                                                                                                                                                                                                                                                                                                                                                      prophylaxis and treatment of pathological conditions resulting from a bacterial infection, for evaluating a compound, such as a polypeptide, for the ability to bind a P. aeruginosa nucleic acid, as components of effective antibacterial targets, as targets for antibacterial drugs, including anti-P. aeruginosa drugs, as templates for recombinant production of P. aeruginosa-derived peptides or plypeptides, as target components for diagnosis and/or treatment of P. aeruginosa-caused infection, and in detection of P. aeruginosa sequences or other sequences of Pseudomonas species using biochip technology. Sequences ABO67826-ABO84396 represent P. aeruginosa polypeptides of the invention. Note: The sequence data for this patent did not form part of the printed specification but was obtained in electronic format from USPTO at secretary research.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The invention relates to Pseudomonas aeruginosa polypeptides and the polynucleotides encoding them. The sequences are useful in diagnosis and therapy of pathological conditions, as molecular targets for diagnostics,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Novel isolated nucleic acid encoding Pseudomonas aeruginosa polypeptide, useful as molecular targets for diagnostics, prophylaxis and treatment of pathological conditions resulting from bacterial infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18-FEB-1998;
27-JUL-1998;
                                                                                                                                                                                                                                                                                                               Sequence 409
                                                                                                                                                                                                                                                                                                                                              seqdata.uspto.gov/sequence.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; SEQ ID NO 20236; 455pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rubenfield MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-FEB-1999;
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                      223
                                                                                                                   115
                                                                                                                                                                                66
                                                                                                                                                                                                                                                  94;
                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENOME
                                                                                                                                                                                WDEYATGVIRRHPAAT-----ADNRR----RLFALPGPRATLEGHPG-GGSVPWGEYAT 114
                                                                                                                                                                                                               WLEKPSGFFAQPPPLTEVAVRKVKDRRRSFYRIFFDSG----FTPHPGEPGSQRWLSY--
                    GLPKGAVPPGEDV-
                                                                                                                 GVIRRYPAATADNRKRLFALQAHVPCRKATRGWPFCMATNATGAIRCLPAVLLHRHPAQV 174
                                                  DTDHHRVVVG-GPVRLGVVQAVLLPRGLELDVVVQHPGLVGVDVPLHRAAYLARQAGVGE
                                                                                 ----HGTEMGRAPLDLAVFRAWKLHDBLGLNIVM--PVL----PMHGPR--
                                                                                                                                                ----TANNREYALLIRHPEP----RPWLVCV------
                                                                                                                                                                                                                                                  Conservative
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98US-0094190P.
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                                                                                                                                                                                                                                                              5.1%;
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                                                                                                                                                                                                                                             Score 112.5; DB 7;
Pred. No. 0.02;
33; Mismatches 111;
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ARESULT 13
ABU34102
ID ABU34
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                       The invention relates to an isolated nucleic acid comprising any one of CC the 6213 antisense sequences given in the specification where expression CC of the nucleic acid inhibits proliferation of a cell. Also included are: CC (1) a vector comprising a promoter operably linked to the nucleic acid conceins acid; (2) a host cell containing the vector; (3) an isolated converge conceleic acid; (2) a host cell containing the vector; (3) an isolated college contest acid; (4) an antibody capable of specifically binding contingence nucleic acid; (4) an antibody capable of specifically binding contingence contest activity of a gene in an operon required for proliferation; (7) identifying a compound that influences the activity of the gene product or that has an activity against a biological pathway contest for identifying a gene required for collular proliferation, or that inhibits cellular proliferation; (8) identifying a gene required for cellular proliferation or the biological pathway in which a proliferation-required gene or the biological cor a gene on which the test compound that inhibits proliferation of an organism acts; (9) manufacturing an antibiotic; (10) proliferation of an organism acts; (9) manufacturing an antibiotic; (10) proliferation of an organism acts; (9) manufacturing an antibiotic; (10) proliferation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21-MAR-2001;
06-SEP-2001;
25-OCT-2001;
08-FEB-2002;
   compound's activity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 25; SEQ ID NO 62026; 1766pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.
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DB; ACA37972.
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Trawick
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2001US-0342923P.
2002US-00072851.
2002US-0362699P.
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                                                                                                                                                                                                                                          Pseudomonas
                                                                                                                                                                                                                                                                                                                 Bacterial infection;
                                                                                                                                                                                                                                                                                                                                                                                     Pseudomonas
                                   18-FEB-1999;
                                                                                                          22-APR-2003.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WDIRRLLSWIRSQEEESLIGLNGLSLGGYIASLVASLEEGLACAILGVPVADLIELLGRH
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGPGTGK---TTTVARLLALLVEQAERAGEPRPXIALAAPTGKAAARLAEAVAAEIEHLD 225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GEPGSQRWLSYTANNREYALLL----RHPEPRPWLVCVHGTEMGRA-------
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RRPVSNHRVFERISQEV-----AAG------LEFYG-----NRRWL 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EHWGKPEIVWYPGGHTGFFQS-RPVRRFVQA-----ALEQSGLLDA 404
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -- MARLAEAVRPDTRLILVG-
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                                                                                                                                                                                                                                              aeruginosa
                                                                                                                                                                                                                                                                                                                                                                              aeruginosa polypeptide #10278.
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                                       99US-00252991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -ELLAAGGEHIEWVDSERPADRLREVLVSHALRLRSAALLGA 396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----PSGFFAQ-----PPPLTEVAVRKVKDRRRSFYRIFFDSGFTPHP 147
                                                                                                                                                                                                                                                                                                              Pseudomonas aeruginosa infection; antibacterial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   46; Mismatches 148;
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RESULT 15 ABG61612

ABG61612 standard; protein; 691 AA

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(first entry)
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Matches 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  bacterial infection, for evaluating a compound, such as a polypeptide, for the ability to bind a P. aeruginosa nucleic acid, as components of effective antibacterial targets, as targets for antibacterial drugs, including anti-P. aeruginosa drugs, as templates for recombinant production of P. aeruginosa-derived peptides or polypeptides, as target components for diagnosis and/or treatment of P. aeruginosa-caused infection, and in detection of P. aeruginosa sequences or other sequences of Pseudomonas species using biochip technology. Sequences ABO67826-ABO84396 represent P. aeruginosa polypeptides of the invention. Note: The sequence data for this patent did not form part of the printed specification but was obtained in electronic format from USPTO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Novel isolated nucleic acid encoding Pseudomonas aeruginosa polypeptide, useful as molecular targets for diagnostics, prophylaxis and treatment of pathological conditions resulting from bacterial infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The invention relates to Pseudomonas aeruginosa polypeptides and polynucleotides encoding them. The sequences are useful in diagnot therapy of pathological conditions, as molecular targets for diag prophylaxis and treatment of pathological conditions resulting fi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-PSDB;
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27-JUL-1998;
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265 ASHPFGVHDERVHPGF-----RRYVGLVVGHVGAAPGLAVPPHQALLLRVPRLAAD
                                                                                                                                                                                                                                                                                                                                                                                                      123 AVRKVKDRRRSFYRIFFDSGFTPHPGEPGSQRWLSYTANNREYALLLRHPEPRP----WLV 179
                                                                                                                                                                                                                                                                                           66 ---- SRSGRGCPDYSCFTSRLFHVDQERLELRRLGIPVAHEGGQGIGQEAVARHAGEAPV
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                                                                                                                                                                                                                                                                                                                                                                                                                                            84;
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                                  VWYPGG----HTGFFQSRPVRRFVQAAL--
                                                                      RVGELVGRAEQFHVVLEHPCRRVÄDRLAVVAVQGVHPDRRLERLVVLGERAFGHLVDGEQ
                                                                                                                                                                                                                                                                                                                               CVHGTEMGRAPLDLAVFRAWKLH-DELGLNIVMPVLPMHGPRGQGLPKGAV-----FPG
                                                                                                        FI-----WEHWGKPEI 372
                                                                                                                                          AQLLGQRLADLDELLG.
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                                                                                                                                                                                                                                                       EDVLDDVHGTAQAVWDIRRLLSWIRSQEEESL----IGLNGLSLGGYIASLVASLEEGLA
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98US-0094190P
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human; serine protease; dipeptidyl peptidase IV-related protein; DPRP; DPRP; infection; human immunodeficiency virus; HIV-1; HIV-2; pain; diabetes; infertility; obesity; are parkinson's disease; stroke; heart failure; hypertension; urinary retention; osteoporosis; cancer; ulcer; allergy; cancer; psychotic disorder; neurological disorder; dyskinesia; reproductive disorder; inflammatory disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New dipeptidyl peptidase IV-related proteins and nucleic acids encoding the proteins, useful for treating e.g. fungal, bacterial, protozoan and viral infections, cancers, allergies, neurological disorders, or pain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>۾</u>
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| 44<br>5                                  | 42<br>43                                 | 4 0<br>1                                 | 39                 | 38                 | 37                 | 36                 | 35                 | 34                 | 33                 | 32                 | <u>3</u> 1         | 30                 |
|--|--|--|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 889                                      | 89.5                                     | 90<br>89.5                               | 90.5               | 90.5               | 90.5               | 90.5               | 90.5               | 91                 | 91                 | 91                 | 91.5               | 91.5               |
| 4.<br>4.<br>1                            | 4 4<br>1 1                               | 44.1                                     | 4.1                | 4.1                | 4.1                | 4.1                | 4.1                | 4.1                | 4.1                | 4.1                | 4.2                | 4.2                |
| 357<br>606                               | 5 <b>7</b> 0                             | 671<br>400                               | 925                | 505                | 502                | 502                | 307                | 1159               | 633                | 421                | 1860               | 391                |
| NN                                       | ۲ 2                                      | NN                                       | ν                  | N                  | N                  | N                  | N                  | N                  | N                  | N                  | N                  | N                  |
| C72746<br>T35378                         | D72597<br>A69655                         | C81033<br>H82833                         | S27920             | T03394             | T50754             | S30916             | C85363             | E83237             | T17262             | JC7367             | T17485             | AD2856             |
| probable carbamoyl<br>probable peptide h | hypothetical prote<br>two-component sens | prolyl oligopeptid<br>proline dipeptidas | nuclear antigen EB | probable betaine-a | protochlorophyllid | bchY protein - Rho | hypothetical prote | probable two-compo | hypothetical prote | second peroxisomal | peptide synthetase | conserved hypothet |

#### ALIGNMENTS

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hypothetical protein Rv2627c - Mycobacterium tuberculosis (strain H37RV)
(;Species: Mycobacterium tuberculosis
C;Date: 17-Jul-1998 #sequence\_revision 17-Jul-1998 #text\_change 09-Jul-2004
C;Accession: B70573
R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Go
Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holr
Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S.
Nature 393, 537-544, 1998
A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G.
A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete
A;Reference number: A70500; MUID:98295987; PMID:9634230
A;Accession: B70573 A;Status: preliminary; nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
A;Residues: 1-413 <COL>
A;Cross-references: UNIPROT:006185; UNIPARC:UPI00000CCAF2; GB:Z95387; GB:AL123456; NID:9
A;Experimental source: strain H37Rv
C;Genetics: δ 밁 닭 δ 밁 5 S 밁 श् 문 Ś A;Gene: Query Match Best Local Sin Matches 413; 361 301 181 241 181 121 121 61 61 1 MASSASDGTHERSAFRLSPPVLSGAMGPFMHTGLYVAQSWRDYLGQQPDKLPIARPTIAL Similarity AAQAFRDEIVLLGLKARRPVSNHRVFERISQEVAAGLEFYGNRRWLEKPSGFFAQPPPLT ELLGRHCGLRHKDPRRHTVKMAEPIGRMISPLSLTPLVPMPGRFIYAGIADRLVHPREQV GTAQAVMDIRRLLSWIRSQEEESLIGLNGLSLGGYIASLVASLEEGLACAILGVPVADLI EVAVRKVKDRRRSFYRIFFDSGFTPHPGEPGSQRWLSYTANNREYALLLRHPEPRPWLVC EVAVRKVKDRRRSFYRIFFDSGFTPHPGEPGSQRWLSYTANWREYALLLRHPEPRPWLVC MASSASDGTHERSAFRLSPPVLSGAMGPFMHTGLYVAQSWRDYLGQQPDKLPIARPTIAL TRLWEHWGKPEIVWYPGGHTGFFQSRPVRRFVQAALEQSGLLDAPRTQRDRSA ELLGRHCGLRHKDPRRHTVKMAEPIGRMISPLSLTPLVPMPGRFIYAGIADRLVHPREQV GTAQAVWDIRRLLSWIRSQEEESLIGLNGLSLGGYIASLVASLEEGLACAILGVPVADLI VHGTEMGRAPLDLAVFRAWKLHDELGLNIVMPVLPMHGPRGQGLPKGAVFPGEDVLDDVH VHGTEMGRAPLDLAVFRAWKLHDELGLNI VMPVLFMHGPRGQGLPKGAVFPGEDVLDDVH AAQAFRDEIVLLGLKARRPVSNHRVFERISQEVAAGLEFYGNRRWLEKPSGFFAQPPPLT 100.0%; Score 2195; DB 2; ilarity 100.0%; Pred. No. 2.2e-175; Conservative 0; Mismatches 0; Length 413; Indels 0 Gaps 300 120 300 240 240 180 180 120 60 60 .; Gordon, Holroyd, genome

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361

TRIWEHWGKPEIVWYPGGHTGFFQSRPVRRFVQAALEQSGLLDAPRTQRDRSA 413

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A;ROJECTA - 1.5.82 <KAW>
A;Residues: 1-582 <KAW>
A;Cross-references: UNIPROT:Q9YBQ2; UNIPARC:UPI000005DFBF;
A;Cross-references: Btrain K1
                                                                                                                                  R;Kawarabayasi, Y; Hino, Y; Horikawa, H.; Yamazaki, S.; Haikawa, Y.; Jin-no, K. awa, H.; Takamiya, M.; Masuda, S.; Funahashi, T.; Tanaka, T.; Kudoh, Y.; Yamazaki DNA Res. 6, 83-101, 1999
A;Title: Complete genome sequence of an aerobic hyper-thermophilic Crenarchaeon, A;Reference number: A72450; MUID:99310339; PMID:10382966
A;Accession: D72636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Molecule type: DNA
A;Residues: 1-400 <COL>
A;Cross-references: UNIPROT:053697; UNIPARC:UPI00000C1548;
A;Experimental source: strain H37Rv
C;Genetics:
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R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Go; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holr Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, 537-544, 1998

A;Authhors: Squres, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G. A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete A;Reference number: A70500; MUID:98295987; PMID:9634230

A;Accession: C70837
                                                                                                                                                                                                                                                                             probable acylamino-acid-releasing enzyme APE1547 - Aeropyrum pernix (strain C;Species: Aeropyrum pernix C;Capecies: Aeropyrum pernix C;Date: 20-Aug_1999 #sequence_revision 20-Aug_1999 #text_change 09-Jul-2004 C;Accession: D72636
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C;Species: Mycobacterium tuberculosis
C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 09-Jul-2004
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                                                                                     A; Molecule type: DNA
                                                                                                                A;Status: preliminary
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Best Local S
Matches 97
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97; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RLWEHWGKPEIVWYPGGH 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ----GLRLTN-----ISRDELIAGLAYHGPLNYRPLLPKDRRMIITGLGDRMAPPEHAVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GRHCGLRHKDPRRHTVKMAEPIGRMI--SPLSLTPLVPMPGRFIYAGIADRLVHPREQVT 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HDELGLNIVMPVLPMHGPRGQGLPKGAVFPG----EDVLDDVHGTAQAVWDIRRLLSWI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RAINP--TWRORWSALTANNIVHAQHWRHRDGPRPTLCVIHGF-MGSSYLLNGLFFSLPW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SNLNFYAELAAAHDPAKSFPAPTELPKVTSRPASPLTEWVARGTVD-----NIAFASGF 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGLEFYGNRRWLEKPSGFFAQP------PPLTEVAVRKVKDRRRSFYRIFFDSGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RHIGVDR-IALTGISLGGYTSALLASVESRLEAVIPNCPVVMPAKLFDEWFPANKLVKL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YYRSGYDVLLYTLPFHGQRAE---KFSPFSGFGYFTSGLSGFAEAMAQAVYDFRSIVDYL
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30.5%; Pred. No. 1e-16;
ative 42; Mismatches 122;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             377
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                                            DDBJ:AP000061;
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                                                                                                                                                                                                                                    Yamazaki,
                                            NID:g5104821;
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C; Accession: JC5142
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A;Residues: 1-741 <KAB>
A;Cross-references: UNIPROT:P95782; UNIPARC:UPI00000B5F8A; DDBJ:D83263; NID:g1753196; PI
A;Cross-references: UNIPROT:P95782; UNIPARC:UPI0000B5F8A; DDBJ:D83263; NID:g1753196; PI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Title: Dipeptidyl peptidase IV from Xanthomonas maltophilia: Sequencing and expression A;Reference number: JC5142; MUID:97164011; PMID:9010758 A;Accession: JC5142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R; Kabashima, T.; Ito, K.; Yoshimoto, J. Biochem. 120, 1111-1117, 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         X-Pro dipeptidyl-peptidase (EC 3.4.14.11) - Xanthomonas maltophilia C;Species: Xanthomonas maltophilia C;Date: 31-Jan-1997 #sequence_revision 27-Feb-1997 #text_change 09-
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Best Local Similarity
Matches 86; Conserv
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  458
                                              161
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                                                                                                                                                                                                                                                                                                                                 34 LYVAQ-SWRD-----YLGQQPD--KLPIARPTIALAAQ------AFRD
                                         NNREYALLL-----RHPEPRPWLVCVHGTEMGRAPLDLAVFRAWKLHDELGLNIVMP-
                                                                                          ESQIYAVPLQGGQPQRLSKAPGMHSASFARNASVYVDSWSNNSTPPQIE-----LFRA
                                                                                                                                                                                        DGSILWSSERTGFQHLYRIDSKGKAAALTHGNWSVDELLAVDEKAGLAYF--RAGIESAR
                                                                                                                                                                                                                                 EIVLL------GLKARRPVSNHRVFERISQEVAAGLEFYGNRRWLE--K 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SREIMRSRSPINHVDRIKEPLA-LIHPQNDSRTPLKPL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -WLSYTANNREYALLI---RHPEPRPWLVCVHGTEMGRAPLDLAVFRAWKLHDELGLNIV
  NGEKIATLVENDLADPKHPYAR - - - -
                                                                                                                                      PSGFFA-----OPPPLTEVAVRKVKD--RRRSFYRIFFDSGFTPHPGEPGSQRWLSYTA 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ASELYIMGYSYGGYMTLCALTMKPGLFKAGVAGASVVDWEEMYELSDAAFRNFIEQLTGG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AITWLGYL---PDGRLAV-----VARREGRSAVFIDGERVEAPQGNHGRVVLWRGKLVT
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                                                                                                                                                                                                                                                                                                                                                                             Score 114; DB 2; Length 741;
Pred. No. 0.21;
7; Mismatches 167; Indels 1
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----YREAORPVEFGTLTAADGKTPLNYSVIKPA
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                                                                                                                                                                                                                                                                                                                                                                                Indels 148;
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RESULT 6
T30216
hypothetical protein Z - Streptomyces hygroscopicus
C;Species: Streptomyces hygroscopicus
C;Date: 22-Oct-1999 #sequence_revision 22-Oct-1999 #text_change 09-Jul.
C;Accession: T30216
R;Aparicio, J.F.; Molnar, I.; Schwecke, T.; Koenig, A.; Haydock, S.F.;
Gene 169, 9-16, 1996
A;Title: Organization of the biosynthetic gene cluster for rapamycin in the process of the company of the process of the company of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the 
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E72287
C;Accession: E72287
C;Accession: E72287
C;Accession: Clayton, R.A.; Gill, S.R.; Gwinn, M.L.; Dodson, R.J.; Haft, C., Ri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Nolecule type: DNA
A; Residues: 1-314 <ARN>
A; Cross-references: UNIPROT: Q9X0P3;
A; Cross-references: UNIPROT: Q9X0P3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nature 399, 323-329, 1999
A;Title: Evidence for lateral gene transfer between Archaea A;Reference number: A72200; MUID:99287316; PMID:10360571
A;Accession: E72287
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LYLIWMAHYLSRKGIBAILPVLPGNFTR----VAEGSV-SGKDYFSSDLDRMSRFWEHALT
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                                                                                                                                      Molnar, I.; Schwecke, T.; Koenig, A.; Haydock, S.F.; Khaw,
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Pred. No. 0.19;
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ps, C.A.; Richardson,
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                                                                                                IKAIQDVKTPIMFAH-GADDDLIPPEMSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Alpha/beta
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probable hydrolase from alpha/beta family, YQKD B. subtilis C;Species: Clostridium acetobutylicum C;Date: 14-Sep-2001 #sequence_revision 14-Sep-2001 #text_cha C;Accession: D97235
R;Nolling, J.; Breton, G.; Cmelchenko, M.V.; Markarova, K.S.; Daly, M.J.; Bennett, G.N.; Koonin, E.V.; Smith, D.R.
J. Bacteriol. 183, 4823-4838, 2001
A;Title: Genome Sequence and Comparative Analysis of the Sol A;Reference number: A96900; MUID:21359325; PMID:21359325
A;Accession: D97235
A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Residues: 1-330 <KUR>
A;Cross-references: UNIPROT:Q97FL1; UNIPARC:UPI0000CA5FA;
A;Experimental source: Clostridium acetobutylicum ATCC824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Accession: T30216
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Status: type: DMA
A;Molecule type: DMA
A;Residues: 1-389 <APA
A;Cross-references: UNIPROT:Q54287; UNIPARC:UPI00000BE1FA; EMBL:X86780; NID:g987088; PID
C;Superfamily: Streptomyces hygroscopicus hypothetical protein Z
                                                                                                                                              --GLACAILGVPVADLIELLGRHCGLRHKDPRRHTVKMAEPIGRM----
                                                                                                                                                                                                                                                     GAVFPGEDVLDDVHGTAQAVWDIRRLLSWIRSQEEESLIGLNGLSLGGYIASLVASLEE-
                                                                                                                                                                                                                                                                                                                                                              EPRPWLVCVHGTEMGRAPLDLAVFRAWK-----LHDELGLNIVMPVLPMHGPRGQGLPK 226
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                                                                                                 TKDVSFYVVDCPFSDLPQLFGEKLNYEMKNHGAVVAKMVVFYSSLIAFFKAGFSVYAISP
                                                                                                                                                                                                    ----GNDI---TLGYFEK-YDLNNCVKWVKNKTPGGIIGIHGESMGAATALLQSNMNEK 184
                                                                                                                                                                                                                                                                                                           DSRKTIIIVHGITGSR----
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                                             LSLTPLVPMPGRFIYAGIADRLVHPREQV
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21.1%; Pred. No. 0.43;
vative 37; Mismatches
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24.1%; Pred. No. 0.4;
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                                                                                                                                                                                                                                                                                                                                                                                                                 46;
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C;Species: Xylella fastidiosa
C;Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 05-Oct-20
C;Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 05-Oct-20
C;Accession: A82633
R;anonymous, The Xylella fastidiosa Consortium of the Organization for Nu
Nature 406, 151-157, 2000
Nature 406, 151-157, 2000
A;Title: The genome sequence of the plant pathogen Xylella fastidiosa.
A;Title: The genome sequence of the plant pathogen Xylella fastidiosa.
A;Rote: for a complete 11st of authors see reference number A59328 below
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A; Authors: Ferreira, V.C.A.; Ferro, J.A.; Fraga, J.S.; Franca, S.C.; Franco, M.C.; Frohm J.D.; Junqueira, M.L.; Kemper, E.L.; Kitajima, J.P.; Krieger, J.E.; Kuramae, E.E.; Laigr chado, M.A.; Madeira, A.M.B.N.; Madeira, H.M.F.; Marino, C.L.; Marques, M.V.; Martins, E.M. F.; Matsukuma, A.Y.; Menck, C.F.M.; Miracca, E.C.; Miyaki, C.Y.; F.G.; Nunes, L.R.; Oliveira, M.A.; de Oliveira, M.C.; de Oliveira, R.C.; Palmieri, D.A; Rodriques, V.; Rosa, A.J. de M.; de Rosa Jr. V.B.; de Sa, R.G.; Santelli, R.V.; Sawasak A; Authors: da Silva, A.C.R.; da Silva, F.R.; da Silva, R.G.; W.A.; da Silva, M.; Silva Jr., W.A.; da Silva, M.; Tsuhako, M.H.; Vallada, H.; Van Sluys, M.A.; Verjovski-Almeida, S.; Vettore, A.L.; Za, Reference number: A59328
          A;Residues: 1-285 <ARN>
A;Cross-references: UNIPROT:Q9X0D6; UNIPARC:UPI00000C1315;
A;Experimental source: strain MSB8
                                                                                                                                       A;Title: Evidence for lateral gene transfer between Archaea and A;Reference number: A72200; MUID:99287316; PMID:10360571 A;Accession: H72300
                                                                                                                                                                                                                                                                                   hypothetical protein - Thermotoga maritima (strain MSB8)
C;Species: Thermotoga maritima
C;Species: Thermotoga maritima
C;Date: 11-Jun-1999 #sequence_revision 11-Jun-1999 #text_change 09-Jul-2004
C;Accession: H72300
R;Nelson, K.E.; Clayton, R.A.; Gill, S.R.; Gwinn, M.L.; Dodson, R.J.; Haft;
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C;Superfamily:
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                                                                                          A; Molecule type: DNA
                                                                                                                   A; Status: preliminary
                                                                                                                                                                                                                Nature 399, 323-329, 1999
                                                                                                                                                                                                                                                                  Garrett, M.M.; Stewart,
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A; Cross-references: UNIPROT: Q9PCF2; UNIPARC: UPI00000C284A;
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Best Local :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VPMP--GRFIYAGIADRLVHPREQV---TRLW
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                                                                                                                                                                                                                                                               Clayton, R.A.; Gill, S.R.; Gwinn, M.L.; Dodson, R.J.; Haft, Stewart, A.M.; Cotton, M.D.; Pratt, M.S.; Phillips, C.A.; Ric
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25.0%;
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Pred. No. 0.31;
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                                               GB:AE001765; GB:AE000512;
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A;Molecule type: DNA
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                                                                                                                                                                                              220
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     341
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                                                                                                                                                                                                                                                                                                                                                                                                                                          86
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Local Similarity
                                                                                                                                                                                                                                     SWIRSQEESSLIGENGESEGGYIASEVAS----LEEGEACAILG------VPVADLIE
                                                                                                                                            LL----GRHCGLR-HKD---PRRHT----
                                                                                                                                                                                       DVVK-RDNDKPÍSÍMGFSFGGMÍTTIALAREKRIEKGVICCSGGDWRWINWYSPYTERLR
                                                                                                                                                                                                                                                                                                                            RAW--KLHDELGLNIVMPVLPMHGPRG-QGLPKGAVFPGEDVLDDVHGTAQAVWDIRRLL
                                                                                                                                                                                                                                                                                                                                                                                                                        IFFDSGFTPHPGEPGSQRWLSYTANNREYALLLRHPEPRPWLVCVHGTEMGRAPLDLAVF 196
KVLFFWA-LFDHVI-PYQSYACLHKLLKNKKTVYLPSGHKGSYFFRRYIAKRVVRFLID
                                           PGRFIYAGIADRLVHPREQVTRLWEHWGKPEIVWYPGGHTG--FFQSRPVRRFVQAALE 397
                                                                                              ELYRKNGNEYGCRSEKDCIKNRRNAPEIIKSFNSIEDIRKKPPVGCYFYDPASFAPFVDQ
                                                                                                                                                                                                                                                                                   LLWFGEKFREYNIKTWFLILPYHEKRAPENWSGGEPFYHSSPSFCVKRFDEAVODVIDLV
                                                                                                                                                                                                                                                                                                                                                                          ITFDASYDPIAEESKTVRVYVFEPEKIERNLIF-----LHGIGNGNIP-----Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 101.5; D)
Pred. No. 0.69;
4; Mismatches
                                                                                                                                            ----VKMAEPIG-RMISPLSLTPLVPM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      133;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
       283
                                                                                                                                                                                          166
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R,Kawarabayasi, Y.; Hino, Y.; Horikawa, H.; Yamazaki, S.; Haikawa, Y. awa, H.; Takamiya, M.; Masuda, S.; Funahashi, T.; Tanaka, T.; Kudoh, DNA Res. 6, 83-101, 1999
A;Title: Complete genome sequence of an aerobic hyper-thermophilic Cra, Reference number: A72450; MUID:99310339; PMID:10382966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Gene: APE1275
C;Superfamily: tryptophanase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: UNIPROT:Q9YCI2; UNIPARC:UPI000005DEA6; DDBJ:AP000061; NID:g5104821; A;Experimental source: strain Kl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Reference number: A72450; A; Accession: C72601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Species: Aeropyrum pernix
C;Date: 20-Aug-1999 #sequence_revision 20-Aug-1999 #text_change 09-Jul-2004
C;Accession: C72601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            probable tryptophanase APE1275 - Aeropyrum pernix (strain C_iSpecies: Aeropyrum pernix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Residues: 1-467 < KAW>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     113 FAQPPPLTEVAVRKVKDRRRSFYRIFFDSGFTPHPGE---PGSQRWLSYTANNREYALLL 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
KMAEPIGRMISPLSLTPLVPMPGRFIYAGIADRL
: | :: | : | : | : | : |
                                                                                                                                                                                                                                                                                                                                                          RHPEPRPWLVCVHGTEMGRAPLDL-AVFRAWKLHDELGLNIVMPV-----LPMHGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FRDEI-VLLGLKARRPVSNHRVFERI------SQEVAAGLEFYGNRRWLEKPSGF- 112
                                                                                 IGGFIATRDPSLYEDLAARVVLEEGYVTYGGLAGRDL-EAIAQ--GLREVVEEDYLRHRV
                                                                                                                                 LGGYIASLVASLEEGLACAIL------GVPVADLIELLGRHCGLR----HKDPRRHTV
                                                                                                                                                                                                                                                  RGQGLPKGAVFPGEDVLDDVHGTAQAVWDI----RRLLSW----IRSQEEESLIGLNGLS
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                                                                                                                                                                                                                                                                                                       LVITNNTAGGO-PVSMDNVKTVRELADAYGLPLVMDICRFAENAYLVKERDP
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                                                                                                                                                                                                                                                                                                                                                                                                                -QASRREAY------PFKGDIDVARLERLLK--ERSRDVAFIL 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 101.5;
Pred. No. 1.3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                            -WSVRDIAREMISYGDHFVMSAKKDGL-----AN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels 105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
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bh, Y.; Yamazaki,
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hypothetical protein SSO2810 [imported] - Sulfolobus solfataricus (;Species: Sulfolobus solfataricus C;Species: Sulfolobus solfataricus C;Date: 24-May-2001 #sequence_revision 24-May-2001 #text_change 09-Jul-2004 C;Accession: B90458 R;She, Q.; Singh, R.K.; Confalonieri, F.; Zivanovic, Y.; Allard, G.; Awayez, M.; Jong, I.; Jeffries, A.C.; Kozera, C.J.; Medina, N.; Peng, X.; Thi-Ngoc, H.P.; arrett, R.A.; Ragan, M.A.; Sensen, C.W.; Van der Oost, J. submitted to GenBank, April 2001 submitted to GenBank, April 2001 A;Description: Sulfolobus solfataricus complete genome. A;Reference number: A99139 A;Accession: B90458 A;Status: preliminary a.M.Status: preliminary a.M.Status: preliminary
                                                                                                                                                                                                                                                                                                                                                    RESULT
B90458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Nierman, W.C.; Feldblyum, T.V.; Paulsen, I.T.; Nelson, K.E.; Eisen, J.; Heidelberg, J. B.; Laub, M.T.; DeBoy, R.T.; Dodson, R.J.; Durkin, A.S.; Gwinn, M.L.; Haft, D.H.; Kolon, J.; Ermolaeva, M.; White, O.; Salzberg, S.L.; Shapiro, L.; Venter, J.C.; Fraser, C.M. Proc. Natl. Acad. Sci. U.S.A. 98, 4136-4141, 2001

A;Title: Complete Genome Sequence of Caulobacter crescentus.

A;Reference number: A87249; MUID:21173698; PMID:11259647

A;Accession: C87519
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A;Molecule type: DNA
A;Residues: 1-318 <KUR>
A;Cross-references: UNIPROT:Q97V26; UNIPARC:UPI000064872; GB:AE006641; NID:g13816160;
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A; Residues: 1-1303 <STO>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
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Best Local S
Matches 89
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;Gene: CC2180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            636
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           473 AFKMSYTVRAEVAPDYLNÍADĽNÁ-------YIAGRHPMGERATVVALPEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 MASSASDGTHERSAFRLSPPVLSGAMGPFMHTGLYVAQ-----SWRDYLGQQPDKLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VASLEEG---LACAILGVPVADLIELLGRHCGLRHKDPR-----RHTVKMAEPIGRM 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KGAVFPGEDVLD----DVHGTAQAVW-DIR-RLLSWIRSQEEBSLIGLNGLSLGGYIASL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HPEPRPWLVCVHGTEMGRAPLDLAVFRAWKLHDELGLNIVMPVLPMHGPRGQGLP----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ISPLSLTPLVPMPGRFIYAGIADRL-VHPREQVTRLWEHWGKPEIVWYPGGHTGFFQSRP 387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADSAEFGPKALDGAKIRLVLKDRDQAKVEHIQDRLNQVKDNWAFLVEEHTTSKRQGLYRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APNRPRPAGDLAAKGL-----PIVHVLIPSGFGDAPAAKPLARNW-------
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KDPIWPGRNMIDVSVSVKAGEARTVWLDLRDRILT-----ADSL------YLTLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----GVALDIPALP--GAAGAVIPLNIQV
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Pred. No. 7
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                                                                                                                                                                                                                                                                                                                                                                                                                                                -EYWG--DITYGSQGWPAFEQPKP
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Nature 413, 848-852, 2001
A;Authors: Parry, C.; Quail, M.; Rutherford, K.; Simmonds, M.; Skelton, J.; Stevens, A;Authors: genome sequence of a multiple drug resistant Salmonella enterica se A;Reference number: AB0502; MUID:21534947; PMID:11677608
A;Accession: AB0701
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A;Gene: SSO2810
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A;Residues: 1-1020 <PAR>
A;Cross-references: UNIPARC:UPI0000059DE8;
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       185 EMGRAPLDL--AVFRAWKLHDELG-----LNIVMPVLPMHGPRGQGLPKGAVFPGEDVL 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      87;
                                                                                                                                                                                                                                                                                                                                                                                                                          22 LSGAMGPFMHTGLYVAQS-----WRDYLGQ-QPDKLPIARPTIAL-AAQAFRDEIVLLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     54;
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  DPQGNTFPLNRAEDFYLRVAANIAFMGKTPVALANQEDISLTGVSRI---
                                              LPKGAVFPGEDVLDDVHGTAQAVWDIRRLLSWIRSQEEBSLIGLNGLSLGGYIASLVASL 283
                                                                                                 TTARWPVVAP---ATHRTADGQ-PVSMEAFCIAVAKRLH------
                                                                                                                                                                                                                                                                                  GOSPYPAKAPWYPFVAGQLTELLTSALEGYPYPLKAWISNMSNPFYGVPGLRAVAEEKLK
                                                                                                                                                                                                                                                                                                                                LKARRPVS---NHRVFERISQEVAAGLEFYGN--RRWLEKPSGFFAQPPPLTEVAVRKVK 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VNLRVSEVVDVP 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             --LEQSGLLDAP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PVADLIELLGRHCGLRHKDPRRHTVKMAEPIGRMISPLSLT-PLVPMPGRFIYAGIADRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----FRGKLSTIPPRENGGNMDIKHLTVGTKLYLPVFVNG-----ALLSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DDVHGTAQAVWDIRRLLSWIRSQEEESLIGLNGLSLGG--YIASLVASLEEGLACAILGV
                                                                                                                                            LLLRHPEPRPWLVCVHGTEMGRAPLDLAVF---RAWKLHDELGLNIVMPVLPMHGPRGQG
                                                                                                                                                                                           DPRRLPLFIAIDAFMNETTALADYIVPDTHNFESWGFTAPWGGVASK------A
                                                                                                                                                                                                                                      DRRRSFYRIFFDS-
                                                                                                                                                                                                                                                                                                                                                                                 LSG--GVFVGGGKFNGVSDGPRYNMNSFAGKVKPSGLSIARSKTAYKASEEYRDKIA--G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----VTKKVKEMEYDEYIAYPGIDSNLWNATKKAIKGIISILSKYMAPVEAYILASVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VHPREQVTRLWEHWGKPEIVWYPGGHTGFFQS-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
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21.7%; Pred. No. 8.5;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                      46; Mismatches
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Pred. No. 1.7;
32; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GB:AL513382; PIDN:CAD01982.1;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                        124;
                                                                                                                                                                                                                                      GETPHPGEPGSQRWLSYTANNREYA 166
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| Query Match<br>Best Local Similarity                          | RESULT 15 H84060 Lysophospholipase BH3288 [imported] C;Species: Bacillus halodurans C;Date: 01-Dec-2000 #sequence_revis C;Accession: H94060 R;Takami, H.; Nakasone, K.; Takaki, Nucleic Acids Res. 28, 4317-4331, 2 A;Title: Complete genome sequence o A;Reference number: A83650; MUID:20 A;Accession: H94060 A;Status: preliminary A;Rocule type: DNA A;Residues: 1-260 <sto> A;Cross-references: UNIPROT:Q9K751; A;Experimental source: strain C-125 C;Genetics: A;Gene: BH3288 C;Superfamily: tropinesterase</sto> | Db 105 VERPEDRI<br>Qy 226 KGAVFPGE<br>Db 155 GGE<br>Qy 282 SLEEGLAC<br>: : :  <br>Db 202 AEDPSIA                     | Query Match Best Local Similarity Matches 39; Conser Oy 169 LRHPEPRPW  | RESULT 14 F71404 hypothetical protein - C;Species: Arabidopsis A;Variety: columbia C;Date: 03-Aug-1998 #se C;Accession: F71404 R;Bevan, M; Bancroft, P; Wedler, H; Wedler avanagh, T; Hempel, S. Nature 391, 485-488; N. Laure 391, 485-488; N. Laure 391, 485-488; N. A;Authors: Mueller-Auer erhoft, A; Moores, T.; C; Chalwatzis, N. A;Title: Analysis of 1. A;Reference number: A71 A;Residues: preliminary; A;Gross-references: UNI C;Genetics: Genetics: UNI C;Genetics: 4COP9-4 A;Map position: 4COP9-4 | Qy 344 FIY           Db 803 FIYSRGGF | Db 786           |
|---|---|--|--|--|--------------------------------------|------------------|
| 4.3%; Score 95; DB 2; Length 260;<br>ty 25.5%; Pred. No. 2.1; | BH328B [imported] - Bacillus halodurans (strain C-125) lus halodurans 000 #sequence_revision 01-Dec-2000 #text_change 12-Jul-2004 060 kasone, K.; Takaki, Y.; Maeno, G.; Sasaki, R.; Masui, N.; Fuji, F.; Hir. s. 28, 4317-4331, 2000 e genome sequence of the alkaliphilic bacterium Bacillus halodurans and er: A83650; MUID:20512582; PMID:11058132 060 inary DNA 0 <sto> inary OUNIPROT:Q9K7S1; UNIPARC:UPI00000C415D; GB:AP001518; GB:BA000004; NI: ource: strain C-125</sto>                                      | VERPEDRP-LPCVIYCHGNSGCRADASEAAIVLLPSNITIFTLDFSGSGLS 154 KGAVFPGEDVLDDVHGTAQAVWDIRRLLSWIRSQEEESLIGLNGLSLGGYIASLVA 281 | 4.4%; Score 96; DB 2; Length 505; imilarity 27.5%; Pred. No. 4.2; Conservative 20; Mismatches 53; Indels 30; Gaps 7; LRHPEPRPWLVCVHGTEMGRAPLDLAVFRAWKLHDELGLNIVMPVLPMHGPRGQGLP 225 | al protein - Arabidopsis thaliana Arabidopsis thaliana (mouse-ear cress)  columbia Arabidopsis thaliana (mouse-ear cress)  columbia Arabidopsis thaliana (mouse-ear cress)  columbia Arabidopsis thaliana (mouse-ear cress)  columbia Arabidopsis thaliana (mouse-ear cress)  columbia Arabidopsis thaliana (mouse-ear cress)  ### ### ### ### ### ### ### ### ### #   | FIYAGIADRLVHPREQVTRLWEHWGKPEIVW 374  | LPAIADBVGRVA 802 |

Search completed: March 23, 2006, 05:26:36 Job time : 17.4313 secs

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Result
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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2: uniprot_trembl:*
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GenCore version 5.1.7
(c) 1993 - 2006 Biocceleration
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Q7TYY1_MYCBO
Q73XD4_MYCDA
Q73XD4_MYCDA
Q73XD4_MYCDA
Q73XD4_MYCTU
Q7TY2_MYCBO
Q65J72_BACLD
Q81CM1_BACCR
Q84F81_MYXXA
Q9C7E5_ARATH
Q9LH51_ARATH
Q9LH51_ARATH
Q9CHBA_ARATH
Q9C7DB_ARATH
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| 121 EVAV<br>181 VHGT                 |                   | 61 AAQA<br>    <br>61 AAQA                                  | 1 MASS<br>    <br>1 MASS                   | atch<br>cal s  | Tuberculist; RV9627G; Tuberculist; Rv9627G; GO; GO:0016787; F:hydrolass InterPro; IPR000379; Ser es Complete proteome; Hydrolas SEQUENCE 413 AA; 46252 N | nplete genc<br>cure 393:53<br>3L; BX84258 | ston J.E.,                | royd S., H<br>Cphy L.D.,<br>Hers J., Ru                                    | υш;  | STRAIN=H37Rv;<br>STRAIN=H37Rv;<br>MEDLINE=98295987;<br>Cole S.T., Brosch | BI_TaxID=17 | OrderedlocusNames=Rv2627c; OrderedlocusNames=Rv2627c; Mycobacterium tuberculosis. Bacteria; Actinobacteria; Actinobacter Corynebacterineae; Mycobacteriaceae; M Mycobacterium tuberculosis complex. | 01-AUG-1997 (TrEMBLrel. 04,<br>01-AUG-1998 (TrEMBLrel. 07,<br>01-CCT-2003 (TrEMBLrel. 25, | TES_MYCTU                       |            | 106.5                                | 107<br>106.5<br>106.5   | 108                                  | 108.5  | 109                                    | 110       |
| <br>EVAVRKVKDRRRSE<br>VHGTEMGRAPLDLA | RKVK              | FRDE  | ASDGT                                      | imilarity<br>; Conser                                  | Rv262<br>Rv262<br>7; F:<br>00037<br>eome;<br>3 AA;   | me se<br>7-544<br>0; CA                   | Tayl                      | ornsb<br>Olive<br>tter   | dcock  | 95987;<br>Brosch   | 73;         | lames=<br>tube<br>inoba<br>inoba<br>neae;   | Tremb   | PRELI                           |            |                                      | 4 4 4<br>0 0<br>0 0   |                                      |  |  |           |
| RRRSFY PLDLA                         | RRRSF             | ATTGT1  | Massasdgthersafrls<br>                     | 100<br>y 100<br>rvative                                | Rv2627c; Rv2627c; 87; F:hydrolase a 87; F:hydrolase a 1000379; Ser estr 1000379; Hydrolase. 13 AA; 46252 MW;   | quence<br>(1998)<br>808637                | or K.,                    | s  | R R C  | 5987; PubMed=9   | <b>,</b>    | Rv2627<br>rculos<br>cteria<br>Mycol   | Lrel.<br>Lrel.<br>Lrel.   | MINARI                          |            | 749<br>7756                          | 757<br>389<br>731   | 784<br>374                           | 751<br>751   | 502<br>324                             | 310       |
| SFYRIFE                              | RIF               | CARRI   | RLSI                                       | 0.04;  | ase a<br>estr<br>lase.   | 7.1,                                      | of Whi                    | oger<br>Oger   | Devi   | 1=963  |             | 7c;<br>sis.<br>A; Ac  | 04,<br>07,<br>25,   | 3                               |            |                                      | <b>⊢ N N</b>  |                                      |  |  |           |
| FDSGFTPHPGEPGSQRWLS                  | DSGFTPHPG         | OVSNHRVFER  | LSPPVLSGAMGP<br>          <br>LSPPVLSGAMGP | Score<br>Pred.<br>, Mism                               | e.<br>e.<br>76   | -; Genomi                                 | Whitehead S. of Mycobacte | ., Jageis K., Kr<br>., Osborne J., Q<br>Seeger K., Skel                    | Basham D., Bro<br>, Devlin K., Fe  | Med=9634230; DOI<br>Parkhill J., Ga                                      |             | ctinobacte<br>eriaceae;<br>complex.   | Creat<br>Last<br>Last   | PRT;                            | ALIGNMENTS | Q7NEK8_GL                            | Q8PFD7_XANAC<br>Q54287_STRHY<br>GLGB_BORPA                    | Q604E5_ME<br>Q72LH2_TH               | Q4UPD3_XA<br>Q8P3V8_XA                                   | Q8GWG9_AR<br>Q6F174_ME                 | Q5WIXO_BA |
|                                      | EPGSQRWLSYTANNREY | IVLIGIKARR PVSNHRVFER I SQEVAAGLEFYGNRRWLEKPSGFFAQPPPLT<br> | PPVLSGAMGPFMHTGLYVAQSWRDYLG<br>            | 2195; DB 2; Length<br>No. 1e-158;<br>natches 0; Indels | ity; IEA.<br>0893D0508523E0 CRC64;   | c_DNA.                                    | ll B.G.;<br>berculosi     | J., Krogn A., McLean J.<br>J., Quail M.A., Rajand<br>Skelton S., Squares S | elet K., Gas S., Daily C.B. 111, C., Brown D., Chillingworth T., K., Feltwell T., Gentles S., Haml | =10.1038/31159;<br>rnier T., Churche                                     |             | eridae; Actinomycetal<br>Mycobacterium;   | ed)<br>sequence update)<br>annotation update)   | 413 AA.                         | ENTS       |                                      |   |                                      |  |  |           |
|                                      | YALLIRHPEPRPWLVC  | WLEKPSGFFAQPPPLT  | Swrdylgqqpdklpiarptial<br>                 | gth 413;<br>els  | •  |   | s from the                | idream M.A.,<br>S., Squares R.,  | es S., Hamlin N.,  | er C.M.,   |             | etales;   |   |                                 |            | Q7nek8 gloeobact<br>Q701m5 brevibaci | Q8pfd7 xanthomonas<br>Q54287 streptomyce<br>Q7w614 bordetella | Q604e5 methyloco<br>Q721h2 thermus t | Q4upd3 xanthomor<br>Q8p3v8 xanthomor<br>C84h72 burkholde | Q8gwg9 arabidopsi<br>Q6f174 mesoplasma |           |
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STRAIN-CDC 1551 / Oshkosh;

MEDLINE=22206494; PubMed=12218036;

MEDLINE=22206494; PubMed=12218036;

DOI=10.1128/JB.184.19.5479-5490.2002;

Fleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O.,

Peterson J.D., DeBoy R.T., Dodson R.J., Gwinn M.L., Haft D.H.,

Hickey E.K., Kolonay J.F., Nelson W.C., Umayam L.A., Ermolaeva M.!

Salzberg S.L., Delcher A., Utterback T.R., Weidman J.F., Khouri H

Salzberg S.L., Mikula A., Bishai W., Jacobs W.R. Jr., Venter J.C.,
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EMBL; AE000516; AAK47018.1; -; Ger
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MEDLINE=22709107; PubMed=12788972; DOI=10.1073/pnas.1130426100; Garnier T., Eiglmeier K., Camus J.-C., Medina N., Mansoor H., Pryor M., Duthoy S., Grondin S., Lacroix C., Monsempe C., Simon S., Harris B., Akkin R., Doggett J., Mayes R., Keating L., Wheeler P.R. Parkhill J., Barrell B.G., Cole S.T., Gordon S.V., Hewinson R.G.; "The complete genome sequence of Mycobacterium bovis."; Proc. Natl. Acad. Sci. U.S.A. 100.7877-7882(2003).

EMBL; BX248343; CAD94845.1; -; Genomic DNA.
GG; GG:0016787; F:hydrolase activity; TEA.
InterPro; ITR000379; Ser estre.
Complete proteome; Hydrolase.
SEQUENCE 413 AA; 46153 MW; 7305EBA059FA8F90 CRC64;
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STRAIN=AF2122/97;
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                                                                   ELIGRHCGLKHKDPRRHTVKMABFIGRMISPLSLTPLVEMPGRFIYAGIADRLVHEREQV
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Matches 109
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C9 MYCPA
Q73TC9 MYCPA 1
Q73TC9;
                                                                                                   OrderedLocusNames=MAP3789c;
Mycobacterium paratuberculosis.
Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
                                                                                                                                                                                                      05-JUL-2004 (TrEMBLrel.
05-JUL-2004 (TrEMBLrel.
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Hypothetical protein.
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Complete proteome; Hydrolase.
SEQUENCE 373 AA; 40489 MW;
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium;
                                 Corynebacterineae; Mycobacteriaceae; Mycobacterium avium complex (MAC).
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                                                        Gill J., Mikuta ...
Gill J., Mikuta ...
Fraser C.M.;
Fraser C.M.;
"Whole-genome comparison of Mycobal
laboratory strains.";
laboratory strains.";
Pacteriol. 184:5479-5490(2002)
                                                                                                                              NUCLEOTIDE SEQUENCE.

STRAIN-CDC 1551 / Oshkosh;

MEDLINE-22206494; PubMed=12218036;

MEDLINE-22206494; PubMed=12218036;

Pleischmann R.D., Bland D., Bisen J.A., Carpenter L., White O.,

Peterson J.D., DeBoy R.T., Dodson R.J., Gwinn M.L., Haft D.H.,

Peterson J.D., DeBoy R.T., Nelson W.C., Umayam L.A., Ermolaeva M.D.,

Hickey E.K., Kolonay J.F., Nelson W.C., Umayam L.A., Ermolaeva M.D.,

Salzberg S.L., Delcher A., Utterback T.R., Weidman J.F., Khouri H.M.,

Gill J., Mikula A., Bishai W., Jacobs W.R. Jr., Venter J.C.,
                                                                                                                                                                                                                                                                                                                             Mycobacterium tuberculosis.
Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium;
                                                                                                                                                                                                                                                                                                                                                                        Hypothetical protein.
OrderedLocusNames=MT0306;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Li L., Bannantine J., Zhang Q., Amonsin A., Al
Submitted (SEP-2003) to the EMBL/GenBank/DDBJ
EMBL; AB017240; AASO6339.1; -; Genomic DNA.
GO; GO:0016787; F:hydrolase activity; IEA.
InterPro; IPR000379; Ser_estrs.
                TIGH; MT0306; -.
GO; GO:0016787; F:hydrolase activity;
InterPro; IPR000379; Ser_estrs.
                                                TIGR; MT0306; -.
                                                                                                                                                                                                                                                                                           Mycobacterium tuberculosis complex.
NCBI_TaxID=1773;
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NUCLEOTIDE SEQUENCE
STRAIN=k10;
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SEQUENCE 399 AA; 43866 MW; 6B28A680BD2C697C CRC64;
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Pred. No. 4.5e-14;
                                                                 Genomic
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A Cole S.T., Brosch R., Parkhill J., Garnier T., Churcher C.M.,

A Harris D.E., Gordon S.V., Eiglmeier K., Gas S., Barry C.E. III,

A Tekaia F., Badcock K., Basham D., Brown D., Chillingworth T.,

A Connor R., Davies R.M., Devlin K., Feltwell T., Gentles S., Hamlin N.

A Holroyd S., Hornsby T., Jagels K., Krogh A., McLean J., Moule S.,

A Holroyd S., Hornsby T., Jagels K., Krogh A., McLean J., Moule S.,

A Holroyd S., Hornsby T., Jagels K., Krogh A., Rejandream M.A.,

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B Holroyd S., Hornsby T., Jagels K., Krogh A., Krogh A., Rejandream M.A.,

B Holroyd S., Holloyd S., Holloyd S., Bartham D., Rejandream M.A.,

B Holroyd S., Holloyd S., Holloyd S., Bartham D., Charley S., Bartham D., Ch
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SEQUENCE
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STRAIN=H37Rv;
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O53697 MYCTU PRELIMINARY;
O53697;
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                                                                                                                                                                                                                                                                                                        GO; GO:0016787; F:hydrolase activity; IEA.
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                                                                                                                                                                                                      InterPro; IPR000379; Ser_estrs.
Complete proteome; Hydrolase; Hypothetical protein.
SEQUENCE 400 AA; 43971 MW; FBEBC136A6DF4ABC CRC64;
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                                                                                                        Similarity
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      AGLEFYGNRRWLEKPSGFFAQP------PPLTEVAVRKVKDRRRSFYRIFFDSGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GRHCGLRHKDPRRHTVKMAEPIGRMI--SPLSLTPLVPMPGRFIYAGIADRLVHPREQVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RHIGVDR-IALTGISLGGYTSALLASVESRLEAVIPNCPVVMPAKLFDEWFPXNKLVKL-
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                                                                                                 Score 293.5; DB 2
Pred. No. 6.5e-14;
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Q7U2C3_MYCBO
Q7U2C3_MYCBO PRELIMINARY; PRT; 400 AA.
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Q7U2C3;
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EMBL; BX248335; CAD93165.1; -; Genomic_DNA.
GG: GG:0016787; F:hydrolase activity; TEA.
InterPro; IPR000379; Ser estrs.
Complete protecome; Hydrolase; Hypothetical protein.
Complete protecome; Hydrolase; Hypothetical protein.
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterinae; Mycobacteriaceae; Mycobacterium;
Mycobacterium tuberculosis complex.
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Pred. No. 6.5e-14;
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Q65J72; Q62UM7;
25-OCT-2004 (TremBLrel. 28,
25-OCT-2004 (TremBLrel. 28,
13-SEP-2005 (TremBLrel. 31,
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Rey M.W., Ramaiya P., Welson B.A., Brody-Karpin S.D., Zaretsky E.J.,
Tang M., Lopez de Leon A., Xiang H., Gusti V., Clausen I.G.,
Olsen P.B., Rasmussen M.D., Andersen J.T., Joergensen P.L.,
Larsen T.S., Sorokin A., Bolotin A., Lapidus A., Galleron N.,
Ehrlich S.D., Berka R.M.;
"Complete genome sequence of the industrial bacterium Bacillus
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"Complete genome sequence of the industrial bacterium Bacillus
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InterPro; IPR00379; Ser_estrs.
PROSITE; PS00120; LIPASE_SER; UNKNOWN 1.
Complete proteome; Hydrolase; Hypothetical protein.
Complete proteome; Hydrolase; EFDC9B4540A14F0B CRC64;
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EMBL; AE017333; AAU40892.1; -; Genomic_DNA.
EMBL; CP000002; AAU23532.1; -; Genomic_DNA.
EMBL; CO:0016787; F:hydrolase activity; IEA.
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Name-ydjC; OrderedLocusNames-BL03227, BLi02000;
Bacillus licheniformis (strain DSM 13 / ATCC 14
Bacteria; Firmicutes; Bacillales; Bacillaceae;
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                 ACAILG-VPVADLIELLGRHCGLRHKDPRRHTVKMAEPIGRMISPLSLTPLVPMPGRFIY
                                                   DSTROAIVDLRALIHWIKANKNGPVÍ-IVGVŠLGGWMTNLLATLETQIDIVVSIFYANRL
                                                                                                                                                                                                                      VKDRRRSFYRIFFDSGFTPHPGEPGSQRWLSYTANN--REYALLLRHPEPRPWLVCVHGT
                                                                                                                                                                                                                                                                                      DEIVLLGLKARR PVSNHRVFER I SOEVAAGLE FYGNRRWLEKPSGFFAQPPPLTEVAVRK
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                                                                                                                                                   EMGRAPLDLAVFRAWKLHDELGLNIVMPVLPMHGPRGQGLPKGAVFPGEDVLD-----DV
                                                                                                                                                                                     YESRKNHLAGHFSYESLIP-SGDP-----VNDALKGEVFLNKNDIDQPNVIFVHGW
                                                                                                                                                                                                                                                        DRIALYDLHRKRSKDEH--FSAFSLNPIDRDEFYKAK-----AADVAIML
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                                                                                HGTAQAVWDIRKLLSWIRSQEEESLIGLNGLSLGGYIASLVASLE
                                                                                                                    RMDSYDRIKKIFHD-RIMNELGWNLYYYSLPYHFERE---PEHSLYSGELMISANLNRTV
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Last sequence up
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Pred. No. 1.5e
59; Mismatches
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                                                                                    287
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SSEPPPRE

Myxococcus xanthus. Bacteria; Proteobacteria; Hypothetical protein.

Cystobacterineae;

Myxococcaceae;

Deltaproteobacteria; caceae; Myxococcus.

Myxococcales;

Q84FB1 MYXXA PRELIMINARY, Q84FB1, 01-JUN-2003 (TremBLrel. 2 01-JUN-2003 (TremBLrel. 2 01-JUN-2003 (TremBLrel. 2

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PRELIMINARY;

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Best Local S
Matches 79
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NEDLINB=22608415; PubMed=12721630; DOI=10.1038/nature01582;
NEDLINB=22608415; PubMed=12721630; DOI=10.1038/nature01582;
Ivanova N., Sorokin A., Anderson I., Galleron N., Candelon B.,
Kapatral V., Bhattacharyya A., Reznik G., Mikhailova N., Lapidus A.,
Chu I., Mazur M., Golteman E., Larsen N., D'Souza M., Walunas T.,
Chu I., Mazur M., Golteman E., Larsen N., D'Souza M., Walunas T.,
Grechkin Y., Pusch G., Haselkorn R., Fonstein M., Ehrlich S.D.,
Overbeek R., Kyrpides N.C.;
"Genome sequence of Bacillus cereus and comparative analysis with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacillus cereus (strain ATCC 1457;
Bacteria, Firmicutes; Bacillales;
Bacillus cereus group.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nature 423:87-91(2003).
EMBL; AE017006; AAP09687.1; -; GO; GO:0016787; F:hydrolase act InterPro; IPR000379; Ser_estrs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OrderedLocusNames=BC2733;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacillus anthracis.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             proteome; Hydrola
333 AA; 38859
                                                                                                                       QALPKVKKENILLISGKCDLYVY-SEDTDYLWESWERPTRYIYTCGHAGIVLKR
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                                                                                                                                                                                                                                            SLVEEEID-VLASIFYANRLSYSIWNTIPGKFI---REDLEHHGVTYDDLIDYWKITEPS
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Pred. No. 3.3e-05;
6; Mismatches 125;
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NUCLEOTIDE SEQUENCE.

Lin X., Kaul S., Town C.D., Benito M., Creasy T.H., Haas Lin X., Kaul S., Town C.D., White O., Utterback T. Maiti R., Ronning C.M., Koo H., Pujii C.Y., Utterback T. Barnstead M.E., Bowman C.L., White O., Nierman W.C., Fra Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases. EMBL, AC069473; AA651056.1; -; Genomic_DNA.

Hypothetical protein.

Hypothetical protein.

SEQUENCE 375 AA; 42136 MW; A36E7F425875B6A2 CRC64;
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Hartzell P.L., Youderian P.A.;
Submitted (DEC-2002) to the EMBL/GenBank/DDBJ
EMBL; AY204469; AA022902.1; -; Genomic_DNA.
Hypothetical protein.
SEQUENCE 326 AA; 35332 MW; C82D125BA41518E
                                                                                                                                                                                                                                                                                                                                                                                                                  Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core e
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
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                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          251
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                                                                                                            NHRVFERISQEVAAGLEFYGNRRWLEKPSGFFAQPPPLTEVAVRKVKDRRRSFYR--IFF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ALTAAVVPEPLAVAALAAGASPVPVFTQGLLSWSIAFALLDGPRRDAEQARSRLGRIFDL
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                                       DSGFTPHPGE----
                                                                          NLELLERMVQRLFP-LEVQG-QNW-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LSLTPLVP--MPGRFIYAGIADRLVHPREQVTRLWEHWGKPEIVWYPGGH-TGFFQSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SLVAS-LEEGLACAILGV---PVADLIE-LLGRHCGLRHKD-PRRHTVKMAEPIGRMISP
 QTPCADELTAALPPESR - - -
                                                                                                                                                     Conservative
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                                                                                                                                                                     7.0%;
28.0%;
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                               -PGSQRWLSYTANNREYALLLRHPEPRPWLVCVHGTEMGRAPL-DL
                                                                                                                                                     40;
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                                                                                                                                                 Score 153.5; DB 2;
Pred. No. 0.0028;
0; Mismatches 131;
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Pred. No. 0.
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 -TA--RVAWLVPKNVPPOKMACVVHLAVVRRACLCDL
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                                                                                                                                                                                                                                                                                                                                                                                                                                    Embryophyta; Tracheophyta; edons; core eudicots; rosid
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                                                                                                                                                     SLIHWLDTEEGFGKMGVCGLSMGGVHASMVGSLHP-----TPVATL-PFLSPHSAVV
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                                         GIADRLVHPREQVTRLWEHWGKPEIVWYPGGHTGFF
                                                                            AFCEGILKYGTAWEALREELAAQKITWTLDEVRERWRNVLSLTDVTRFPIPKNPDAVIFV
                                                                                                                                                                                            RLLSWIRSQEEESLIGLNGLSLGGYIASLVASLEEGLACAILGVPVADLIELLGRH----
                                                                                                                                                                                                                                                                   VFRAWKLHDEL-GLNIVMPVL--PMHGPRGQGLPKGA-VFPGEDVLDDVHGTAQAVWDIR
                                                                                                                                                                                                                                                                                                        ---QTPCADELTAALPPESR----TA--RVAWLVPKNVPPQKMACVVHLAGTGDHTYD--
                                                                                                                                                                                                                                                                                                                                            DSGFTPHPGE----PGSQRWLSYTANNREYALLLRHPEPRPWLVCVHGTEMGRAPLDLA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HGTAQAVWDIRRLLSWIRSQEEESLIGLNGLSLGGYIASLVASLEEGLACAILGVPVADL
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     AATDDGYIPKHSVLELQKAWPGSEVRWVTGGHVSSF
                                                                                                                     --C---
                                                                                                                                                                                                                                --RRIRLGGPLVKONIATMVLESPFYGORRPFLQCGARLLCVSDLL--LLGRA-TIEESR
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6.7%;
27.7%;
                                                                                                                -GLRHK-DPRRHTVKMAEPIGRMISPLSLT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                              38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 148; DB
Pred. No. 0.006
38; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                133;
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Q9C7D8;
Q9C7D8;
Q1-UUN-2001 (TrEMBLrel. 17, C:
01-UUN-2001 (TrEMBLrel. 25, L:
01-OCT-2003 (TrEMBLrel. 25, L:
Hypothetical protein F28J15.20
Name=F28J15.20;
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Hypothetical protein.

SEQUENCE 360 AA; 40396 MW; EA53833CDF3C404C CRC64;
 Southwick A., Karlin-Neumann G., Palm C.J., Bowser L., Jones T.,
                                                                      Bukaryota; Viridiplantae; Streptophyta; Embry
Spermatophyta; Magnoliophyta; eudicotyledons;
eurosids II; Brassicales; Brassicaceae; Arabi
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A3_ARATH
QBRWA3_ARATH PRELIMINARY;
QBRWA3;
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Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosid
eurosids II; Brassicales; Brassicaceae; Arabidopsis.

NCBI_TaxID=3702;
                                                                                                                              Hypothetical protein Name=At3g12150;
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                             NUCLEOTIDE
                                                     NCBI_TaxID=3702;
                                                                                                                Arabidopsis thaliana (Mouse-ear cress).
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                             SEQUENCE.
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protein At3g12150 (At3g12156).
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Dale J.M., Hayashizaki Y., Ishida J., Jones T., Kamiya A.,
Karlin-Neumann G., Kawai J., Lam B., Lin J., Miranda M., Narusal
Nguyen M., Onodera C.S., Palm C.J., Quach H.L., Sakurai T., Satc
Seki M., Southwick A., Toriumi M., Wong C., Wu H.C., Yamada K.,
Shinozaki K., Davis R.W., Theologis A., Ecker J.R.;
Submitted (UIN-2003) to the EMBL/GenBank/DDBJ databases.
EMBL, AY03334; AAM13333.1; -; mRNA.
EMBL; BT008851; AAP68290.1; -; mRNA.
Hypothetical protein.
Hypothetical protein.
SEQUENCE 363 AA; 40784 MW; 6A86B799868E1748 CRC64;
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Search completed: March 23, 2006, 05:24:31 Job time : 108.63 secs

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US-09-252-991A-20236
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US-09-976-674-43
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                                                                                                                                                                                                                                       Sequence 11591, A
Sequence 20236, Ap
Sequence 26849, A
Sequence 27, Appl
Sequence 27, Appl
Sequence 17549, A
Sequence 13872, A
Sequence 11812, A
Sequence 118, App
Sequence 22, Appl
Sequence 24, Appl
Sequence 15329, A
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Sequence 17824, A
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PRIOR APPLICATION NUMBER: 60/217,883
PRIOR FILING DATE: 2000-07-10
NUMBER OF SEQ ID NOS: 16825
SEQ ID NO 11591
LENGTH: 172

TYPE: PRT
ORGANISM: Myxococcus xanthus

CURRENT APPLICATION NUMBER: US/09/902,540
CURRENT FILING DATE: 2001-07-10

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|---|--|----------------------|---------------------|--------------------|---------------------|------------------|----------------------|----------------------|---------------------|---------------------|---------------------|----------------------|-------------------|----------------------|---|----------------------|--------------------|------------------|---------------------|
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| <b>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 </b>   | 2 US-09-902-540-11138       Sequence         2 US-10-142-231-90       Sequence         2 US-09-433-043B-119       Sequence         2 US-09-252-991A-25463       Sequence         2 US-08-790-912-4       Sequence         2 US-08-790-91A-31822       Sequence         2 US-09-252-991A-31822       Sequence         2 US-09-252-991A-27870       Sequence         2 US-09-252-991A-27870       Sequence         2 US-09-270-767-6233       Sequence         2 US-09-270-767-44775       Sequence         2 US-09-270-767-44775       Sequence         2 US-09-252-991A-25131       Sequence         2 US-09-252-991A-32102       Sequence         2 US-09-9252-991A-31103       Sequence         2 US-09-902-540-13431       Sequence         2 US-09-902-540-13431       Sequence         2 US-09-902-540-15986       Sequence         2 US-09-902-540-15986       Sequence         2 US-09-252-991A-27127       Sequence  | 4.1                  | 4.1                 | 4.2                | 4.2                 | 4.2              | 4.2                  | 4.2                  | 4.2                 | 4.2                 | 4.2                 | 4.2                  | 4.2               | 4.2                  | 4.3   | 4.3                  | 4.3                | 4.3              | 4.3                 |
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|   |  | US-09-252-991A-27127 | US-09-902-540-15986 | US-09-902-540-9733 | US-09-902-540-13431 | US-09-818-780-76 | US-09-252-991A-32102 | US-09-252-991A-25131 | US-09-902-540-14037 | US-09-270-767-44775 | US-09-270-767-60233 | US-09-252-991A-27870 | US-09-477-962-101 | US-09-252-991A-31822 | US-08-790-912-4                               | US-09-252-991A-25463 | US-09-433-043B-119 | US-10-142-231-90 | US-09-902-540-11138 |

## ALIGNMENTS

RESULT 1 US-09-902-540-11591

Sequence 11591, Application US/09902540 Patent No. 6833447

GENERAL INFORMATION:
APPLICANT: Goldman, Barry S.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and Uses Thereof
FILE REFERENCE: 38-10(15849)B

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RESULT 2
US-09-489-039A-7241
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Sequence 7241, Application US/09489039A

PATENT NO. 6610836

GENERAL INFORMATION:

APPLICANT: Gary Breton et. al

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA

TITLE OF INVENTION: PNEUMONIAE FOR DIAGNOSTICS AND THERAPEUTICS

FILE REFERENCE: 2709.2004001

CURRENT APPLICATION NUMBER: US/09/489,039A

CURRENT FILING DATE: 2000-01-27
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Local Similarity 30.4%;
tes 45; Conservative 2
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Pred. No. 1.2e-05;
L; Mismatches 72; Indels
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CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 20236
Ś
                                                                                                               ; LENGTH: 409
; TYPE: PRT
; ORGANISM: Pseudomonas
US-09-252-991A-20236
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US-09-252-991A-20236
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PRIOR FILLING DATE: 1999-01-29
NUMBER OF SEQ ID NOS: 14342
SEQ ID NO 7241
                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 20236, Application US/09252991A Patent No. 6551795
                                          Matches
                                                        Query Match
Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
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TYPE: PRT
ORGANISM: Klebsiella
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                                        94;
  WLEKPSGFFAQPPPLTEVAVRKVKDRRRSFYRIFFDSG---
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GL-----KARRPVSNHRVFERISQEVAAGLEFYGNRRWLEKPSGFFAQPPPLTEVAV
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                                        Conservative
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24.7%;
                                                                                                                                     aeruginosa
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                                        33;
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                                      Score 112.5; DB 2;
Pred. No. 0.0035;
13; Mismatches 111;
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                                      Indels 143;
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  -FTPHPGEPGSQRWLSY--
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SEQ ID NO 26849
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APPLICANT: Marc J.
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Best Local Similarity
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Patent No. 6551795
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CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
PRIOR FILING DATE: 1998-07-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: MATC J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 1127
TYPE: PRT
ORGANISM: Pseudomonas aeruginosa
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                                                                                                                                                                                                                                                                                                                                                      123 AVRKVKDRRRSFYRIFFDSGFTPHPGEPGSORWLSYTANNREYALLLRHPEPRP---WLV 179
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                                                                                                                   CAILGVPVADLIELLGRHCGLRHKDPRRHTVKMAEPIGRMISPLSLTPLV-----PMPGR 343
                                                                                                                                                                                                                                                                           CVHGTEMGRAPLDLAVFRAWKLH-DELGLNIVMPVLPMHGPRGQGLPKGAV-----FPG 232
                                        FI-----WEHWGKPEI 372
                                                                                                                                                        DRDADVVHGLA-----VHLQRADALGHHRHRLDVAAVGGDL-DLVA----GID 164
                                                                                                                                                                                                                                     ----SRSGRGCPDYSCFTSRLFHVDQERLELRRLGIPVAHEGGQGIGQEAVARHAGEAPV 121
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                                                                                                                                                                                                                                                                                                                                                                                         5.0%; Score 109.5; DB 2; 23.5%; Pred. No. 0.036; ative 36; Mismatches 100;
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      264
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CURRENT APPLICATION NUMBER: US/09/976,674
CURRENT FILING DATE: 2001-10-12
PRIOR APPLICATION NUMBER: US 60/240,117
PRIOR FILING DATE: 2000-10-12
NUMBER OF SEQ ID NOS: 61
SOFTWARE: PatentIn version 3.1
SEQ ID NO 43
LENGTH: 691
TYPE: PAT
ORGANISM: Homo sapiens
US-09-976-674-43
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US-09-976-674-43
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                                GENERAL INFORMATION:
APPLICANT: Van Grinsven J., Martinus Q
APPLICANT: De Haan, Petrus T.
APPLICANT: Gielen L., Johannes J.
APPLICANT: Peters, Dirk
APPLICANT: Goldbach, Robert W.
TITLE OF INVENTION: Improvements in or
TITLE OF INVENTION: Compounds
NUMBER OF SEQUENCES: 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                    Sequence 27, Applion Patent No. 5773700
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Best Local 9
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APPLICANT: Akinsanya, Karen
APPLICANT: Rivisere, Pierre
APPLICANT: Junien, Jean-Louis
TITLE OF INVENTION: NOVEL SERINE PROTEASE GENES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILE REFERENCE: 70669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.9%; Score 106.5; DB 2; Local Similarity 18.2%; Pred. No. 0.035; es 63; Conservative 63; Miamarant
   ADDRESSEE:
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No. 6844180
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                                                                                                                                                                                                                       Application US/08764100
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Sandoz Agro,
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RESULT 7
US-09-252-991A-17549
; Sequence 17549, Application US/09252991A
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: NO. 5773700ris, Allen
REGISTRATION NUMBER: 34,490
REFERENCE/DOCKET NUMBER: 13
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 354-3592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
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FILING DATE: 17-MAR-1993
APPLICATION NUMBER: GB 9206016.9
FILING DATE: 19-MAR-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION: 800
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/214,064
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STRANDEDNESS: unki
TOPOLOGY: unknown
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ZIP: 94304
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CITY: Palo Alto
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Conservative 40;
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NO: 27:
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Pred. No. 0.39;
0; Mismatches
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2178

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; ORGANISM: Myxococcus xanthus US-09-902-540-16812
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                           APPLICANT: Goldman, Barry S.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and Uses Thereof
FILE REFERENCE: 38-10(15849) B
CURRENT APPLICATION NUMBER: US/09/902,540
CURRENT FILING DATE: 2001-07-10
PRIOR APPLICATION NUMBER: 60/217,883
PRIOR FILING DATE: 2000-07-10
NUMBER OF SEQ ID NOS: 16825
SEQ ID NO 16812
LENGTH: 981
TYPE: PRT
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PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 17549
LENGTH: 563
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                                                                                                                                                                                                                                                                Sequence 16812, Appended No. 6833447
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GENERAL IN
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Best Local
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CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
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TITLE OF INVENTION:
TITLE OF INVENTION:
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23.7%;
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Pred. No. 0.078;
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APPLICANT: Glidman, Barry S.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
FITLE OF INVENTION: Myxococcus xanthus Genome Set, TITLE OF INVENTION: Myxococcus xanthus Genome Set, TITLE OF INVENTION: Myxococcus xanthus Genome Set, TITLE OF INVENTION: Myxococcus xanthus Genome Set, TITLE OF INVENTION: Myxococcus xanthus Genome Set, TITLE OF INVENTION: Myxococcus xanthus Genome Set, TITLE OF INVENTION: MYXOCOCCUS Xanthus Genome Set, TITLE OF INVENTION: MYXOCOCCUS Xanthus Genome Set, TITLE OF INVENTION: MYXOCOCCUS XANTHUS DESCRIPTION: MYXOCOCCUS XANTHUS AND XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS XANTHUS X
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Matches 66; Conservative 4
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              107 EKPSGFFAQPPPLT-EVAVRKVKDRRRSFYRIFFDSGFTPHPGEPGSQRWLSYTANNREY 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                217 HGPRGQGLPKGAVFPGEDVLDDVHGTAQAVWDIRRLLSWIRSQEEESLIGLNGLSLGGYI 276
                                                                                                                                                                                                                                                            VRSTLYLL-
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                                                                                                                                                                                                                                                                                                                                        -RRSFYRIFFDSGFTPHPGEPGSQRWLSYTANNREYALLLRHPEPRPWLVCVHGTEMGRA 189
                                                                                                                                                                                                                                                                                                                                                                                                                                  RTAHNWRVVGRLADGVDLQAARVELTHIARELEAQYG---QDTRMHDIAVEPLQESLVGR 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RPVSNHRVFERISQEV---AAGLEFYGNRRWLEKPSGFFAQPPPLTEVAVRKVKDR----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WKRYLGARPLPLP---DTLTFEGRAY----TVVGVMPESFDYPVGTQLWVPRELVPPLPS 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QWERVMDHF 977
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                                                                                     PGALMRRFLMESILLSLAGGALGAVLAAW-----
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                                                                                                                                                                      LDL----AVFRAWKLHDELGLNIVMPVLPMHGPR------
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                                                                                                                                                                                                                                                            --AGANAFLILVAGANVTNLLLARAATRARELAIH-VALGAG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 99.5; DB Pred. No. 0.34;
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--PKGAVFPGEDVLDDVHGTAQAVWDIRRLLSWIRS
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                                                                                          -GVRALLAAEPGHLPRVDEVGVNATV 294
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US-09-602-777A-118; Sequence 118, Application US/09602777A; Patent No. 6831165; GENERAL INFORMATION:
                                                                                                            RESULT 11
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-902-540-15329
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SEQ ID NO 15329
LENGTH: 1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 15329, Application US/09902540 Patent No. 6833447
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
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APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and Uses Thereof FILE REFERENCE: 38-10(15849)B
FULL REPERENCE: 38-10(15849)B
CURRENT APPLICATION NUMBER: US/09/902,540
CURRENT FILING DATE: 2000-07-10
PRIOR APPLICATION NUMBER: 60/217,883
PRIOR FILING DATE: 2000-07-10
APPLICANT: Pompejus, Markus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Myxococcus xanthus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                                 1026
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                                                                                                                                                                                 ATVRTVKEQLRSVPNRGL--
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YGNRRWLEKPSGFFAQPPPLTE-----VAVRKVKDRRRSFYRIFFDSGFTPHPGEPGS-Q 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGPVVTTALLELGPHRPSRLMIAAHRLVVDGVSWRVLFEQLQLAYEQLGGGGGECKLPPRT 885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ------VLIGLKARRP----VSNHR------VFERIS---QEVAAGLE-----F
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23.7%;
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                                                                                                                                                                               GYGVLRYLSPDAELRARLARAPQA---EVLFRYVGQYH 1078
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PRIOR FILING DATE: 1999-07-14

PRIOR FILING DATE: 1999-07-14

PRIOR APPLICATION NUMBER: DE 19932935.4

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US-09-602-777A-118
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PRIOR FILLING DATE: 1999-07-09
PRIOR PELLING DATE: 1999-07-19
PRIOR PELLING DATE: 1999-07-19
PRIOR PELLING DATE: 1999-07-19
PRIOR PELLING DATE: 1999-07-09
PRIOR PELLING DATE: 1999-07-09
PRIOR PELLING DATE: 1999-07-14
PRIOR APPLICATION NUMBER: DE 19932920.6
PRIOR PELLING DATE: 1999-07-14
PRIOR APPLICATION NUMBER: DE 19932922.2
PRIOR PELLING DATE: 1999-07-14
PRIOR APPLICATION NUMBER: DE 19932924.9
PRIOR PELLING DATE: 1999-07-14
PRIOR APPLICATION NUMBER: DE 19932924.9
PRIOR PELLING DATE: 1999-07-14
PRIOR APPLICATION NUMBER: DE 19932928.1
PRIOR APPLICATION NUMBER: DE 19932930.3
PRIOR APPLICATION NUMBER: DE 19932930.3
PRIOR APPLICATION NUMBER: DE 19932930.3
PRIOR APPLICATION NUMBER: DE 19932930.3
PRIOR APPLICATION NUMBER: DE 19932933.8
PRIOR APPLICATION NUMBER: DE 19932933.8
PRIOR FILLING DATE: 1999-07-14
PRIOR APPLICATION NUMBER: DE 19932933.8
PRIOR FILLING DATE: 1999-07-14
PRIOR APPLICATION NUMBER: DE 19932933.8
PRIOR FILLING DATE: 1999-07-14
PRIOR APPLICATION NUMBER: DE 19932933.8
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SEQ ID NO 118
                                                                                                          Matches
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PRIOR
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PRIOR APPLICATION NUMBER: DE 19932125.6
PRIOR FILING DATE: 1999-07-09
PRIOR APPLICATION NUMBER: DE 19932126.4
PRIOR FILING DATE: 1999-07-09
PRIOR APPLICATION NUMBER: DE 19932127.2
PRIOR FILING DATE: 1999-07-09
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CURRENT FILING DATE: 2000-06-23
PRIOR APPLICATION NUMBER: US 60/141031
PRIOR FILING DATE: 1999-06-25
PRIOR APPLICATION NUMBER: DE 19931636.8
PRIOR APPLICATION NUMBER: DE 19931636.8
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                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 668
                                                                                                                                         Local
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APPLICATION NUMBER: DE 19933005.0
FILING DATE: 1999-07-14
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41 RDYLGQQPDKLPIARPTIALAAQAF------RDEIVLLGLKARRPVSNHR- 84
                                                                                                                                                   Similarity
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Zelder, Oskar
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ilarity 20.8%;
Conservative 52
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                                                                                           Score 98; DB:
Pred. No. 0.27;
52; Mismatches
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                                                                                                     157;
                                                                                                                                                                                                 Length 668;
                                                                                                Indels 138;
                                                                                                Gaps
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-EQW---RELCDRP

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APPLICANT: Xue, Y.
APPLICANT: Zhao, L.
APPLICANT: Zhao, L.
FITTE OF INVENTION: DNA encoding methymycin a
FILE REFERENCE: 600.438US1
CURRENT APPLICATION NUMBER: US/09/105,537A
CURRENT FILING DATE: 1998-06-26
NUMBER OF SEQ ID NOS: 43
SOFTWARE: FABLSEQ for Windows Version 3.0
SEQ ID NO 22
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US-09-105-537-22
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                                                                                                                                                                                                                                                                                                            Matches
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                                                                                                                                                                                                                                                                                                                                                                        TYPE: PRT
ORGANISM: Streptomyces venezuelae
-09-105-537-22
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                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 402
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                                                                                                                                            228 AVFPGEDVLDDVHGTAQAVWDI-----RRLLSWIRSQEEESLIGLNGLS-----LGGYIA 277
                                                                                                                                                                                                                                                                         110 SGFFAQPPPLTEVAVRKVKDRRRSFYRIFFDSGFTPHPGEPGSQRWLSYTANNREYALLL
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                                                PAVTA----AAAAVLGVPADRRADFADLLERLRPLSDSLLAPQSLRTVRAADGALAELTA
                                                                              SLVASLEEGLACAILGVPV-----ADLIELLGRHCGLRHKDPRRHTVKMAEPI-----
                                                                                                              VLSYGEGCPLEREQVLPAAGDVPEGGQRAVVEGIHRETLEGLAPDPSASYAFELLGGFVR
                                                                                                                                                                             RGQADDPY -- PAYERVRARGALSFSPTGSWVTADHALAASILCSTDFGVSGADGVPVPQQ
                                                                                                                                                                                                             RHPEPRPWLVCVHGTEMGRAPLDLAVFRAWKLHDE-LGLNIVMPV-LPMHGPRGQGLPKG
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22.8%; Pred. No. 0.16;
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GENERAL INFORMATION:
APPLICANT: Sherman, D.H.
APPLICANT: Liu, H.
APPLICANT: Yue, Y.
APPLICANT: Zhao, L.
APPLICANT: Zhao, L.
TITE BOT INVENTION: DNA encoding methymycin a
FILE REFERENCE: 600.438US1
CURRENT APPLICATION NUMBER: US/09/105,537A
CURRENT FILING DATE: 1998-06-26
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US-09-902-540-10121
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US-09-105-537-4
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US-09-105-537-4
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APPLICANT: Goldman, Barry S.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and Uses Thereof
FILE REFERENCE: 38-10(15849)B
CURRENT APPLICATION NUMBER: US/09/902,540
CURRENT FILING DATE: 2001-07-10
PRIOR APPLICATION NUMBER: 60/217,883
PRIOR FILING DATE: 2000-07-10
NUMBER OF SEQ ID NOS: 16825
                                                                                                                                                                                                                         Sequence 10121, Application US/09902540 Patent No. 6833447
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Best Local
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SOFTWARE: FastSEQ for Windows Version
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75; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AVFPGEDVLDDVHGTAQAVWDI-----RRLLSWIRSQEEESLIGLNGLS-----LGGYIA 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RGQADDPY--PAYERVRARGALSFSPTGSWVTADHALAASILCSTDFGVSGADGVPVPQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RHPEPRPWLVCVHGTEMGRAPLDLAVFRAWKLHDE-LGLNIVMPV-LPMHGPRGQGLPKG
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                                                                                                                                                                                                                                                                                                                                                                                                               LLADSDDSPGALLSALGVTAAVQLTGNAVLA----
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llarity 22.8%;
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; Pred. No. 5.3;
35; Mismatches 13
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RESULT 15
US-09-902-540-15882
; Sequence 15882, Application US/09902540
; Patent No. 6833447
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TYPE: PRT
; ORGANISM: Myxococcus xanthus
US-09-902-540-15882
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; TYPE: PRT
; ORGANISM: Myxococcus xanthus
US-09-902-540-10121
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                                                                                                                                                                         Query Match
Best Local S
Matches 76
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APPLICANT: Hinkle, Gregory J.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and Uses Thereof FILE REFERENCE: 38-10(15849) ECURRENT APPLICATION NUMBER: US/09/902,540
CURRENT FILING DATE: 2001-07-10
PRIOR FILING DATE: 2001-07-10
PRIOR FILING DATE: 2000-07-10
NUMBER OF SEQ ID NOS: 16825
SEQ ID NO 15882
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Matches 97
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LENGTH: 596
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              258 SQEEESLIGLN------GLSLGGYIASLVASLEEGLAC--AILGVPVADLIELLGRHC 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            362 KTIVEVEHRGVLVYAG-----LAVAFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 308 -----LRDAVRAEPFPYVACLVADGDRMGRALEALARQPDGHAAHQRISRALADFTRQA 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             163 REYALLLR---HPEPRPWLVCV--HGTEMGRAPLDLA------VFRAWKLHDELG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      207 LNIV----MPVLPMHGPRGQGLPKGAVFPGEDVLD-----DVHGTAQAVWDIRRLLSWIR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        269 FPYDGQLLLPERVAPYFEEYAVPDARQAAARFVHEFV-----EP------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  108 -KPSGFFAQP----PPLTEVAVRKVKDRRRSFYRIFFDSGFTPHPGEPGSQRWLSYTANN 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             221 VPVPSIGMAAWLQTAATRHPALLAALKAE---CARRGFQTVSVR------NRPWVEA
  136 ADALKRGVAEPAASALPVQDTIDEAERIRAILLAIST---AGNKGVLRRMGRTVRLVLER 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    169 GTHKSS-----LDGARPSLLRRERHVGHLWRDFRIGLREELDALGVLKRVGGNPGQF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         56 ---PTIALAA----QAFRDEIVLLGLKARRPVSNHRVFERISQEVAAGLEFYGNRRWLE-
                                         48 PDKLP--IARPTI-ALAAQAFRDE----IVLLGLKARRPVSNHRVFERISQEVAAGLEF
                                                                                    76
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                                                                                                                                8 GTHERSAFRLSPPVLSG---AMGP----FMHT------GLYVA----QSWRDYLGQQ 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8 GTHERSAFRLSPPVLSGAMGPFMHTGLYVAQSWRDY---LGQQPDKLPIAR-----
                                                                                                                                                                       h 4.4%; Score 96; DB 2; Length 416; Similarity 24.1%; Pred. No. 0.21; 76; Conservative 35; Mismatches 115; Indels
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                                                                                  GEVDTSDARALPVYLSGCGVTLGPIRGAPIRTDAETAGTPVGLQLANVSLEQGRQILTLL
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                                                                                                                                                                                             155 WLSYTANNRBYALLLRH------PEPRPWLVCVHGT-----EMGRAPLDLA---VFRAW 199
                                                                                                                                                                                                                                           193 YNAETEQLEWHAEDPVTDWGEAPYDIDVI-----GHNSAYRMRLEA-----GTPGGQR 240
335 RADGTV-LCGLSVSPY
                                     260 EEESLIGLNGLSLGGY 275
                                                                                                                                                           241 ---FTSPLPDVLFRIRHRWHRRSPAPEGVRVTFHHPLWREQGEMERAVLDLSFSGMCIRC 297
                                                                                                                                                                                                                                                                                   100 YG----NRRW-LEKPSGFFAQPPPLTEVAVRKVKDRRRSFYRIFFDSGFTPHPGEPGSQR 154
                                                                                                    KLHDELGLNIVMPVLPMHGPRGQGLPKGAVFPGEDVLDDVHGTAQAVWDIRRLLSWIRSQ 259
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Result
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Gapop 10.0 , Gapext 0.
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US-10-425-114-39-196342
US-11-097-143-27990
US-10-282-122A-62026
US-10-424-599-227907
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Sequence 286397,
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3879, App
22, Appl
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43, Appl
60109, A
15631, A
16006, A
16360, A
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; ORGANISM: Mycobacterium tuberculosis US-10-617-038-29

SOFTWARE: PatentIn version 3.2 SEQ ID NO 29

LENGTH: 413 TYPE: PRT

Query Match Best Local Similarity Matches 413; Conservat

100.0%; Score 2195; DB 4; ilarity 100.0%; Pred. No. 6.9e-207; Conservative 0; Mismatches 0;

Length 413; Indels

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ELLGRHCGLRHKDPRRHTVKMAEPIGRMISPLSLTPLVPMPGRFIYAGIADRLVHPREQV

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EVAVRKVKDRRRSFYRIFFDSGFTPHPGEPGSQRWLSYTANNREYALLLRHPEPRPWLVC AAQAFRDEIVLLGLKARRPVSNHRVFERISQEVAAGLEFYGNRRWLEKPSGFFAQPPPLT AAQAFRDEIVLLGLKARRPVSNHRVFERISQEVAAGLEFYGNRRWLEKPSGFFAQPPPLT MASSASDGTHERSAFRLSPPVLSGAMGPFMHTGLYVAQSWRDYLGQQPDKLPIARPTIAL

EVAVRKVKDRRRSFYRIFFDSGFTPHPGEPGSQRWLSYTANNREYALLLRHPEPRPWLVC

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| RESULT 1 US-10-617-038- ; Sequence 29; Publication ; GENERAL INFO ; APPLICANT: APPLICANT: APPLICANT: APPLICANT: APPLICANT: FILE REFERE CURRENT FIL FILE REFERE CURRENT FIL FRIOR APPLI PRIOR APPLI PRIOR APPLI PRIOR APPLI PRIOR APPLI PRIOR APPLI PRIOR APPLI PRIOR APPLI PRIOR APPLI PRIOR APPLI PRIOR APPLI PRIOR APPLI PRIOR APPLI PRIOR APPLI PRIOR APPLI PRIOR APPLI PRIOR APPLI PRIOR FILIN NUMBER OF S SOFTMARE: P   |            | 222<br>222<br>322<br>322<br>322<br>323<br>323<br>323<br>323<br>323   |
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| JUT 1  10-617-038-29  -10-617-038-29  Sequence 29, Application US/10617038  Sequence 29, Application US/10617038  Publication No. US20040057963A1  GENERAL INFORMATION:  APPLICANT: Andersen, Peter APPLICANT: ROSenkrands, Ida APPLICANT: Stryhn, Anette  TITLE OF INVENTION: Therapeutic TB  FILE REFERENCE: SSISAUSA  CURRENT APPLICATION NUMBER: US/10/6  CURRENT FILING DATE: 2003-07-11  FRIOR APPLICATION NUMBER: DK PA 200  PRIOR FILING DATE: 2002-07-13  PRIOR FILING DATE: 2002-07-13  PRIOR FILING DATE: 2002-08-07  NUMBER OF SEQ ID NOS: 187  SOPTWARE: Patentin version 3.2   |            | 96<br>6. 9999999999999999999999999999999999  |
| 8-29  N. Application U  N. OUS20040057  FORMATION:  Andersen, Pete Rosenkrands,  Stryhn, Anett INVENTION: Thera RENCE: SSISAUSA PPLICATION NUMBER: ILICATION NUMBER: ING DATE: 2002-0  LICATION NUMBER: ING DATE: 2002-0  SEQ ID NOS: 187  Patentin Versio   |            | 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4  |
| pplication US/1 lo. US20040057963 MATION: MATION: MATION: Peter Rosenkrands, Ida Stryhn, Anette ENTION: Therapeu ICC: SSI5AUSA ICC: SSI5AUSA ICATION NUMBER: NG DATE: 2003-07-1 ATION NUMBER: DK DATE: 2002-07-1 CENTION NUMBER: OK DATE: 2002-07-1 CO ID NOS: 187 Q ID NOS: 187 LERITIN VERSION 3   |            | 4402<br>3782<br>3782<br>3782<br>3782<br>3782<br>3782<br>3782<br>378  |
| 63AA 63AA 663AAA 663AA 663AA 663AA 663AA 663AA 663AA 663AA 663AA 663AA 663AA 663AAA 663AA 663AA 663AA 663AA 663AA 663AA 663AA 663AA 663AA 663AAA 663AAA 663AAA 663AA 663AA 663AA 663AA 663AA 663AA 663AA 663AA 663AA 663AA 663AA 663AA 663AA 663AA 663 |            | 0 0 0 0 0 4 4 4 0 0 0 0 0 4 4 4 4 6  |
| ULT 1 10-617-038-29 10-617-038-29 equence 29, Application US/10617038 ublication No. US20040057963A1 ENERAL INFORMATION: APPLICANT: Andersen, Peter APPLICANT: Rosenkrands, Ida APPLICANT: Stryhn, Anette TITLE OF INVENTION: Therapeutic TB Vaccine FILLE FERRENCE: SS15AUSA CURRENT APPLICATION NUMBER: US/10/617,038 CURRENT FILING DATE: 2003-07-11 PRIOR APPLICATION NUMBER: DK PA 2002 01098 PRIOR FILING DATE: 2002-07-13 PRIOR APPLICATION NUMBER: US 60/401,725 PRIOR FILING DATE: 2002-08-07 NUMBER OF SEQ ID NOS: 187 SOFTWARE: PatentIn version 3.2  | ALIGNMENTS | US-09-861-289-22<br>US-09-860-846-22<br>US-09-988-3948-22<br>US-09-836-821-2<br>US-10-271-889-2<br>US-10-425-115-309560<br>US-09-861-289-4<br>US-09-861-289-4<br>US-09-868-3848-4<br>US-09-868-3848-4<br>US-10-271-889-47<br>US-11-271-889-47<br>US-11-271-889-47<br>US-11-425-115-23184<br>US-11-425-115-231184<br>US-11-425-114-46399<br>US-11-425-114-46399 |
|  |            | Sequence<br>Sequence<br>Sequence<br>Sequence<br>Sequence<br>Sequence<br>Sequence<br>Sequence<br>Sequence<br>Sequence<br>Sequence<br>Sequence<br>Sequence<br>Sequence<br>Sequence<br>Sequence<br>Sequence<br>Sequence<br>Sequence<br>Sequence   |
|  |            | 22, Appl<br>22, Appl<br>22, Appl<br>22, Appl<br>22, Appl<br>22, Appl<br>22, Appl<br>309560,<br>4, Appli<br>4, Appli<br>4, Appli<br>4, Appli<br>4, Appli<br>4, Appli<br>4, Appli<br>4, Appli<br>238559,<br>88, Appli<br>238559,<br>88, Appli<br>23184,<br>46399, A  |

DB 4; 81;

Length 369;

Indels

69;

Gaps

368

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258 287

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APPLICANT: La Rosa, Thomas J.
APPLICANT: Kovalic, David K.
APPLICANT: Kovalic, David K.
APPLICANT: Chou, Yihua
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules and
TITLE OF INVENTION: Plants
FILE REFERENCE: 38-21(5322)B
CURRENT APPLICATION NUMBER: US/10/425,115
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 369326
SEQ ID NO 286397
LENGTH: 366
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Sequence 39123, Application US/10425114
; Publication No. US20040034888A1
; GENERAL INFORMATION:
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US-10-425-115-286397
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Publication No. US20040214272A1
GENERAL INFORMATION:
                                                                                                 NUMBER OF SEQ ID NOS:
SEQ ID NO 39123
LENGTH: 369
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Best Local S
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APPLICANT: Kovalic, David K.
APPLICANT: Screen, Steven E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack B
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53313)8
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT FILING DATE: 2003-04-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Liu, Jingdong APPLICANT: Zhou, Yihua
      ORGANISM: Zea mays FEATURE:
                                                                        TYPE: PRT
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ORGANISM: Zea mays
FEATURE:
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Similarity 24.6%;
59; Conservative 3:
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; Pred. No. 2.4e-05; 
31; Mismatches 81; Indels 69
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APPLICANT: Liu, Jingdong
APPLICANT: Zhou, Yihua
APPLICANT: Kovalic, Davic
APPLICANT: Screen, Stever
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CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 47261
LENGTH: 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 59; Conserv
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Kovalic, David K.
APPLICANT: Screen, Steven E
APPLICANT: Tabaska, Jack E
APPLICANT: Cao, Yongwei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: PRT
ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                              199
                                                                                                                                                                      309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           149 NIATMVLESPYYGORRPSMORGAKLOCVSDLLLLGKATIDEA-----RSLLYWLQ 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         208 NIVMPVL--PMHGPRGQGLPKGA-----VFPGEDVLDDVHGTAQAVWDIRRLLSWIR 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              199 NEAGYGKMGICGLSMGGVHAAMVGSLHPTPVATLPFLAPHSAVVPFCEGVYKYATAWDAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              149 NIATMVLESPYYGQRRPSMQRGAKLQCVSDLLLLGKATIDEA-----RSLLYWLQ 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         208 NIVMPVL--PMHGPRGQGLPKGA------VFPGEDVLDDVHGTAQAVWDIRRLLSWIR 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  59;
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                                                                                                                                                                                                                                                                                                                                                                        --ACAILGVPVADLIELLGRHCGLRHKDPRRHTVKMAEPIGRMISPLSLT-----PLVPM 340
                                                                                                                                                                                                                                                                                                                                                                                                                                              NEAGYGKMGICGLSMGGVHAAMVGSLHPTPVATLPFLAPHSAVVPFCEGVYKYATAWDAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SQEEESLIGLNGLSLGGYIASLVASLE----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            --ACAILGVPVADLIELLGRHCGLRHKDPRRHTVKMAEPIGRMISPLSLT-----PLVPM 340
                                                                                                                                                                                                                                                                                                          RKDAAVLTQDVTLLAEDAAQKSGITIEQVR---
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                                                                                                                                                                      PQAVIFVGATDDGYIPRHSVMELQKAWPGSEVRWVTGGHVSSFFLHNDAFRKAIVDALDR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
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   Application US/10424599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Clone ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; Score 146.5; DB 4; ; Pred. No. 2.4e-05; 31; Mismatches 81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31;
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Pred. No. 2.4e-05;
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With

----DRLRSVLSLTDVTRFPVPKN

308

368

----EGL-----

287

Length 369;

69;

Gaps

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APPLICANT: Venter, J. Craig
APPLICANT: Venter, J. Craig
APPLICANT: Venter, J. Craig
APPLICANT: Vet al.
TITLE OF INVENTION: DETECTION KIT, SUCH AS NUCL
TITLE OF INVENTION: DETECTION EXX
TITLE OF INVENTION: DROSOPHILA GENES.
FILE REFERENCE: CLOOO728
FILE REFERENCE: CLOOO728
CURRENT PILING DATE: 2005-04-04
PRIOR APPLICATION NUMBER: 60/160,191
PRIOR FILING DATE: 1999-10-19
PRIOR FILING DATE: 1999-10-19
PRIOR PILING DATE: 1999-10-19
PRIOR APPLICATION NUMBER: 60/161,932
PRIOR APPLICATION NUMBER: 60/164,769
PRIOR APPLICATION NUMBER: 60/164,769
PRIOR APPLICATION NUMBER: 60/164,769
PRIOR APPLICATION NUMBER: 60/173,383
PRIOR APPLICATION NUMBER: 60/173,383
PRIOR APPLICATION NUMBER: 60/175,693
PRIOR APPLICATION NUMBER: 60/184,831
PRIOR APPLICATION NUMBER: 60/184,831
PRIOR FILING DATE: 2000-01-22
PRIOR FILING DATE: 2000-01-22
PRIOR FILING DATE: 2000-01-22
PRIOR FILING DATE: 2000-01-22
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: La Roba Thomas J
APPLICANT: Kovalic David K
APPLICANT: Cao Vinua
APPLICANT: Cao Yongwei
TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(5322)B
CURRENT APPLICATION NUMBER: US/10/424,599
CURRENT APPLICATION OUMBER: US/10/424,599
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 285684
SEQ ID NO 196342
LENGTH: 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 27990, Application US/11097143
Publication No. US200502085881
GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OTHER INFORMATION: Clone ID: PAT_MRT3847_19323C.1.pep
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OTHER INFORMATION: unsure at all Xaa locations
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NAME/KEY: unsure
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   354 VHPREQVIRLWEHWGKPEIVWYPGGHIGFF--QSRPVRRFVQAALEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                257 RSQBEESLIGLNGLSLGGYIASLVASLEEGLACAILGVPVADLIBLLGRHCG------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             203 DELGLNIVMPVLPMHGPRGQGLPKGAV-FPGEDVLDDVHG-----TAQAVWDIRRLLSWI 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                88
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LKHGTAWEALRKDLAAQKVAMTLEEVRERMRNVLSLTDVTRFPI PKNPNAVI FVAATDDG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EEQLLGALPPV--FYTARAPVLPRGAXRFCVSDLL--LLGRPNLETAP-----RPLHWV
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                                                                                                                                                                                                              Query Match
Best Local S
Matches 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: KOVALIC, David K.

TITLE OF INVENTION: NUCLEIC ACID MOLECULES AND OTHER MOLECULES ASSOCIATED WITH
TITLE OF INVENTION: PLANTS AND USES THEREOF FOR PLANT IMPROVEMENT
FILE REFERENCE: 38-21(53377)B
CURRENT APPLICATION NUMBER: US/10/739,930
CURRENT FILING DATE: 2003-12-18
NUMBER OF SEQ ID NOS: 11088
SEQ ID NO 9602
LENGTH: 322
TYPE: NUMBER: US/10/739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 9602, Application US/10739930 Publication No. US20040216190A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 43008
SOFTWARE: FastSEQ for Windows
SEQ ID NO 27990
LENGTH: 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR FILING DATE: 2000-03-23
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                                                                                                                                                                                                                                                                                                                                          NAME/KEY: unsure
LOCATION: (1)..(32:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                         FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Triticum aestivum
                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: PRT
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Local Similarity 24.5%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  68;
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                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ------ELTPLVPMPGRFIY-AGIADRLVHPR------EQVTRLWEHWGKPEIVWY
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                                 -GLRH-----KDPRRHTVKMA-----EPIGRMISPLSLTPLVPMPGRFIYAGIADRLVH 355
                                                                     AEPGYGKMGICGLSMGGVHAAMAGSL---LSTPIPTLPFLAPHSAVVPFCEGLYRHATAW
                                                                                                   SQEEESLIGLNGLSLGGYIASLVASLEEGLACAILGVP-----VADLIELLGRHC---
                                                                                                                                           NIATMVLESPYYGQRRPSMQHGAKLQCVSDLLLLGKATIDDA-----RSLLYWLQ 179
                                                                                                                                                                            NIVMPVL--PMHGPRGQGLPKGA-----VFPGEDVLDDVHGTAQAVWDIRRLLSWIR 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VVDVAADTVYGQKLMCAIVENTFSSIPEM-----
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EALREDAAALAKDATSLTEDAASGITIEQVXXQIT----
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                                                                                                                                                                                                                  Conservative
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Pred. No. 0.0069;
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SEQ ID NO 62026
LENGTH: 574
                                         Matches 105; Conservative
                                                          Query Match
Best Local Similarity
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TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
FILE REFERENCE: ELITRA.034A

CURRENT APPLICATION NUMBER: US/10/282,122A

CURRENT FILING DATE: 2003-02-20

PRIOR APPLICATION NUMBER: 60/191,078

PRIOR FILING DATE: 2000-03-21

PRIOR PILING DATE: 2000-03-21

PRIOR APPLICATION NUMBER: 60/206,848

PRIOR APPLICATION NUMBER: 60/207,727

PRIOR PILING DATE: 2000-05-23

PRIOR PILING DATE: 2000-05-26

PRIOR APPLICATION NUMBER: 60/230,335

PRIOR APPLICATION NUMBER: 60/230,335
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                                                                                                                                     NAME/KEY: MISC FEATURE
LOCATION: (349)..(349)
OTHER INFORMATION: X=any amino
                                                                                                                                                                                                                                                                                              FEATURE:
NAME/KEY: MISC FEATURE
LOCATION: (199)...(199)
OTHER INFORMATION: X=any amino
                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Mycobacterium avium
                                                                                                                                                                                                                         OTHER INFORMATION: X=any
                                                                                                                                                                                                                                                VAME/KEY: MISC FEATURE
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APPLICATION NUMBER: 60/253,625
FILING DATE: 2000-11-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 2001-02-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 2000-12-2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: 60/230,347 FILING DATE: 2000-09-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: 60/269,308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 2001-02-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: 60/257,931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: 60/242,578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 2000-09-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: 60/267,636
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    23
    SGAMGPFMHTGLY-----VAQSWRDYLGQQPDKLPIARPTIALAAQAFRDEIVLLGLKA 76
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Malone, Cheryl
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Zyskind, Judith
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Trawick, John
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io, Carlos
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                                                          Score 112; DB 4;
Pred. No. 0.11;
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                                           Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: Rice Nucleic Acid Molecules and Other Molecules Associated With TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement FILE REFERENCE: 38-21(53221)B CURRENT APPLICATION NUMBER: US/10/437,963 CURRENT FILING DATE: 2003-05-14 NUMBER OF SEQ ID NOS: 204966 SEQ ID NO 183563 LENGTH: 311
                                                                                                                                                                                                                                              Query Match
Best Local (
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APPLICANT:
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                                                                                                                                                                                                               5.1%;
Local Similarity 24.4%;
es 52; Conservation
                       310
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                                                              151 NEAGYGKMGICGLSMGGVHAAMVGSLHP-----TPIATL-PFLAPHSAVVPFCDGLY 201
                                                                                                                                              101 NIATMVLESPYYGQRRPSMQHGSKLQCVSDLLLLGKATIDEA------RSLLYWLQ 150
                                                                                                                                                                                 208 NIVMPVL--PMHGPRGQGLPKGA-----VFPGEDVLDDVHGTAQAVWDIRRLLSWIR 257
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-----KDPRRHTVKMAEPIG------RMISPLSLT-----PLVPMP 341
                                                                                                                                                                                                                                            Score 111.5; DB
Pred. No. 0.053;
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APPLICANT: Kovalić, David K.
APPLICANT: Zhou, Yihua
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules and
TITLE OF INVENTION: Plants
FILE REFERENCE: 38-21(5322))B
CURRENT APPLICATION NUMBER: US/10/425,115
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 369326
SEQ ID NO 206590
LENGTH: 1470
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US-10-425-115-206590
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; OTHER INFORMATION: Clone ID: PAT_MRT3847_47828C.1.pep
US-10-424-599-227907
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US-10-424-599-227907
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APPLICANT: Kovalic David K
APPLICANT: Kovalic David K
APPLICANT: Chou Yihua
APPLICANT: Chou Yofwei
TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(5322)B
CURRENT APPLICATION NUMBER: US/10/424,599
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 285684
SEQ ID NO 227907
LENGTH: 481
                                                                                                                                                                                                                                                         Sequence 206590, Application US/10425115 Publication No. US20040214272A1
                                                                                                                                                                                                                                         GENERAL INFORMATION:
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Publication No. US20040031072A1
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Best Local Similarity
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                                                                                                                                                                                                APPLICANT: La Rosa, Thomas J. APPLICANT: Kovalic, David K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: Glycine max
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    161 NNREYALLLRHPEPRPW-----LVCV---HGTEMGRAPLDLAVFRAWKLHDELGLNIVMP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                44 NTRGYTLKCSHYLPSPFPEDTSLPCVIYCHGNSGCRADANEAAVIL-----LPSNITVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      KAKFDIMNLNCLQVAPKTFIPVLFGHAS-DDKFIQPHHSDLISEAYAGDKNVIKFDGDHN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGYTASLVASLEEGLACATLGVPVADLTELLGRHCGLRHKDPRRHTVKMAEPIGRMI---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TLDF---SGSGLSDG------DYVSLGWHEKDDLKMVVSYLRSNKQISRIGLWGRSM 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAVTSLLYGAEDPSIAGMVLDSAFSNLYDLMMELADVYKIRLPKFTVKMAVQYMRRVIEK
                                                                                                                                                                                                                                                                                                                                                                             ---SSRPQFFYDSVSIFFYNVLHPPNVPR 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----SPLSLTPLVPMPGRFIYAGIADRLVHPREQVTRLWEHWGKPEIVWYPGGHT 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GRFIYAGIADRLVHPREQVTRLWEHWGKPEIVW 374
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 4; Length 481;
                                                                                                                                            and
                                                                                                                                          Other Molecules Associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           42;
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                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 12
US-09-96674-43
; Sequence 43, Application US/09976674
; Patent No. US20020115843A1
                                                                               ; LENGTH: 691
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-976-674-43
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      Matches
                      Query Match
Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Akinsanya, Kares APPLICANT: Riviere, Pierre
                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Qi, Steve
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      63;
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Similarity 20.0%;
      Conservative
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      63;
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APPLICANT: Junien, Jean-Louis
TITLE OF INVENTION: NOVEL SERINE PROTEASE GENES REI
FILE REFERENCE: 70669
CURRENT APPLICATION NUMBER: US/09/976,674
CURRENT FILING DATE: 2001-10-12
PRIOR APPLICATION NUMBER: US 60/240,117
PRIOR FILING DATE: 2000-10-12
PRIOR FILING DATE: 2000-10-12
NUMBER OF SEQ ID NOS: 61
SOFTWARE: Patentin version 3.1
SEQ ID NO 43
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NAME/KEY: unsure
LOCATION: (1)..(1470)
OTHER INFORMATION: unsure at all Xaa locations
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          294 DRTLVLNL---LRGLSPRYGHLKALIKRSVPFPTFHVVRNELLLEELTMANEAPTPASAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 208 MD-SVVLSW-LHDTITVEL-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    138 FFDSGFTPHPGEPGSQRWLSYT-ANNREYAL----LLRH--PEPRPWLVCVHGTEMGRAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       243 EDQFFGNRDARAL----HLDAQFHLFSQEGLSVGEYCRQM-----KGLADSLRDLGEPVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94 AAGLEFYGNRRWLEKPSGFFAQPPP------LTEVAVRKVKDRRRSFYRI 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62 RVA--PSTIPTTDPPLVSTLASIQAAVMASRERERAASLALERERALG------A 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      43 YLGQQPDKLPIARPTI-----ALAAQAFRDEIVLLGLKARRPVSNHRVFERISQEV 93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4 STTAATGTIAPAAIG-SEPAHGGAPYIIGLGP-LHASSPLPLHRTSPPGFPAFASPTWSH 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 ASSASDGTHERSAFRLSPPVLSGA-----MGPFWHTG-------LYVAQSWRD 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DLIELLGRHCGLRHKDPR----RHTVKMAEPIGR-----MISPLSLTPLVPMPGRFI 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----DIRRLLSWIRSQEEESLIGLNGLSLGGYIASLVASLEEGLACAI--LGVPVA 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LDLAVFRAWKLHDELGLNIVMPVLPMHGPRGQGLPKGAVFPGEDVLDDVHGTAQAVW----
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                      4.9%; Score 106.5; D
18.2%; Pred. No. 0.51;
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Mismatches
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                                                   DB 3;
  106;
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                                                Length 691;
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Indels 115;
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; ORGANISM: Homo sapiens
US-10-982-512-43
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US-10-982-512-43
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Matches
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SEQ ID NO 43
LENGTH: 691
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                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: US/09/976,674
PRIOR FILING DATE: 2001-10-12
PRIOR APPLICATION NUMBER: US 60/240,117
PRIOR FILING DATE: 2000-10-12
NUMBER OF SEQ ID NOS: 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Riviere, Pierre
APPLICANT: Junien, Jean-Louis
TITLE OF INVENTION: NOVEL SERINE PROTEASE
FILE REFERENCE: 70669
CURRENT APPLICATION NUMBER: US/10/982,512
CURRENT FILING DATE: 2004-11-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Qi, Steve APPLICANT: Akinsany
   473
                                                                             418
                                                                                                                 169
                                                                                                                                                    368
                                                                                                                                                                                                                                336
                                       226
                                                                                                                                                                                          129
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       129 DRRRSFYRIFFDSGFTPHPGEPGSQRWLSY------TANNREYALL-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             336 IKIL-----AYDETTQKISASTEGLLNRQC------ISCNFMK 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      288 SRDGSKFFMTVPVKQGGRGEFHHIAMFLIQSKSEQI-----TVRHLTSGNWEV 335
                                                                                                                                                                                                                                                                      69
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                                                                                                                                                                                                                                                                                                                                               9 THERSAFRLSPPVLSGAMGPFMHTGLYVAQSWRDYLGQQPDKLPIARPTIALAAQAFRDE 68
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                                                                                                                                                                                          DRRRSFYRIFFDSGFTPHPGEPGSQRWLSY------TANNREYALL-----
DKFHIDWDSVLIDWDNVIVARFDGRGSGFQGLKILQEIHRRLGSVEVKDQITAVKFLLKL
                                                                           EAILKKKIGKPEIKILHIDDY-ELPLQLSLPKDFMDRNQYALLLIMD----EEPGGQLVT
                                                                                                               ---LRHPEPRPWLVCVHGTEMGRAPLDLAVFRAWKLHDELGLNIVMPVLPMHGPRGQGLP 225
                                                                                                                                                    EQ-----CTYFDASFSPM-----NQHFLLFCEGPRVPVVSLHSTDNPAKYFILESNSMLK 417
                                                                                                                                                                                                                                IKIL-----ISCNEMK 367
                                                                                                                                                                                                                                                                    IVLLGLKARRPVSNHRVFERISQEVAAGLEFYGNRRWLEKPSGFFAQPPPLTEVAVRKVK 128
                                                                                                                                                                                                                                                                                                         SRDGSKFFMTVPVKQGGRGEFHHIAMFLIQSKSEQI-----TVRHLTSGNWEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PYIDSKR----LSIFGKGYGGYIASMILKSDEKLFKCGSVVAPITDL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EAILKKKIGKPEIKILHIDDY-ELPLQLSLPKDFMDRNQYALLLIMD----EEPGGQLVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ---LRHPEPRPWLVCVHGTEMGRAPLDLAVFRAWKLHDELGLNIVMPVLPMHGPRGQGLP 225
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                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                   4.9%; Score 106.5; DB 5;
18.2%; Pred. No. 0.51;
ative 63; Mismatches 106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ---KGAVFPGEDVLDDVH---GTAQAVWDIRRL----L
                                       --KGAVFPGEDVLDDVH---GTAQAVWDIRRL----L
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APPLICANT: Kovalic, David K.

APPLICANT: Screen, Steven B
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Coo, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
FILE REFERENCE: 38-21(53313)B
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 60109
LENGTH: 452
TYPE: ppm
                                                                                                                                                                                                          US-10-369-493-15631
; Sequence 15631, Application US/10369493
; Publication No. US20030233675A1
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GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Cao, Yongwei
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Goldman, Barry S.
APPLICANT: Goldman, Barry S.
APPLICANT: Chen, Xianfeng
TITLE OF INVENTION: EXPRESSION OF MICROBIAL PROTEINS IN PLANTS FOR PRODUCTION;
TITLE OF INVENTION: PLANTS WITH IMPROVED PROPERTIES
FILE REFERENCE: 38-10(52052)B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       52 PIARPTIALAAQAFRDEIVLLGLKARRPVSNHRVFERISQEVAAGLEFYGNRRWLEKPSG 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 86;
                                                                                                                                                                                                                                                                                                                                                                           RLV---HPREQVTRLWE-HWGKPEIVWYPGGHTGFFQSRP----VRRFVQAALEQS 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                          LGVPVADLIELLGRHCGLRHKDPRRHTVKMAEPIGRMISPLSLTPLVPMPGRFIYAGIAD 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PEPRPWLVCVHGTEMGRAPLDLAVFRAWKLHDELGLNIVMPVLPMHGPRGQGLPKGAVFP 231
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                                                                                                                                                                                                                                                                                                                                     EVVDCSHGR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GEDVLDDVHGTAQAVWDIRRLLSWIRSQEEESLIGLNGLSLGGYIASLVASLEEGLACAI 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PGARLTLLYSHGN-----AADLG--OMYELFVELSAHLNVNLMG-YDYSGYGQSSGK--P
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Pred. No. 0.31;
8; Mismatches
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Search completed: March 23, 2006, 06:28:19 Job time: 88.8513 secs
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/10/369,493
CURRENT FILING DATE: 2003-02-28
PRIOR APPLICATION NUMBER: US 60/360,039
PRIOR FILING DATE: 2002-02-21
NUMBER OF SEQ ID NOS: 47374
SEQ ID NO 15631
LENGTH: 742
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 4.8%; Score 104.5; DB 4; Length 742; Best Local Similarity 21.0%; Pred. No. 0.88; Matches 85; Conservative 50; Mismatches 161; Indels 109; Gaps
                                                                                         889
                                                                                                                                353 LV---HPREQVTRLWEHWGKPEIVWYPGGHTGFFQSRPVRRFVQA 394
                                                                                                                                                                              636 PVTDW-GLYDTHYTERYMDLPAGNAAGYREARIATHLDGLRAKLL-----
                                                                                                                                                                                                                          295 PVADLIELLGRHCGLRHKD-PRRHTVKMASP-IGRMISPLSLTPLVPMPGRFIYAGIADR 352
                                                                                                                                                                                                                                                                    577 GKQGTVE-VDDQLQGVAWLKTQRWVDAARIGVQGWSNGGYMTLMLLAKHSEAYACGVAGA 635
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64 AFRDEIVLLGLKARRPVSNHRVFERISQEVAAGLEFYGNRRWLEKPSGFFA-----QPPP 118
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Post-processing: Minimum Match 0%
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seq length: 2000000000
Published_Applications_AA_New:*

1: /cgn2_6/ptodatta/1/pubpaa/US06_NEW_PUB.pep:*

2: /cgn2_6/ptodatta/1/pubpaa/US07_NEW_PUB.pep:*

3: /cgn2_6/ptodatta/1/pubpaa/US07_NEW_PUB.pep:*

4: /cgn2_6/ptodatta/1/pubpaa/US07_NEW_PUB.pep:*

5: /cgn2_6/ptodatta/1/pubpaa/US07_NEW_PUB.pep:*

6: /cgn2_6/ptodatta/1/pubpaa/US10_NEW_PUB.pep:*

7: /cgn2_6/ptodatta/1/pubpaa/US11_NEW_PUB.pep:*

8: /cgn2_6/ptodatta/1/pubpaa/US11_NEW_PUB.pep:*
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(c) 1993 - 2006 Biocceleration Ltd
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

| 2222221114<br>222222223   | Result<br>No.  |
|---|----------------|
| 8 8888888 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9   | Score          |
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| 2458<br>350<br>2458<br>7025<br>1025<br>2458<br>402<br>2458<br>2458<br>2458<br>2458<br>2458<br>2458<br>2458<br>245   | Length         |
| 1111011111110111011111  | B              |
| -11-186-999 -11-186-999 -11-186-999 -11-186-999 -11-186-999 -11-186-999 -11-096-568 -11-096-568 -11-096-568 -11-096-568 -11-096-568 -11-096-568 -11-096-568   | ID             |
| Sequence 4, Appli<br>Sequence 4, Appli<br>Sequence 4, Appli<br>Sequence 110, Appli<br>Sequence 110, Appli<br>Sequence 111, Appli<br>Sequence 111, Appli<br>Sequence 228, Appli<br>Sequence 228, Appli<br>Sequence 3373, Appli<br>Sequence 1554, Appli<br>Sequence 15774, Appli<br>Sequence 16614, Appli<br>Sequence 18613, Appli<br>Sequence 18613, Appli<br>Sequence 120, Appli<br>Sequence 110, Appli<br>Sequence 110, Appli<br>Sequence 110, Appli<br>Sequence 110, Appli<br>Sequence 110, Appli<br>Sequence 110, Appli<br>Sequence 110, Appli<br>Sequence 110, Appli<br>Sequence 110, Appli<br>Sequence 110, Appli<br>Sequence 110, Appli | 2 ! B          |

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41 RDYLGQQPDKLPIARPTIALAAQAF-------RDEIVLLGLKARRPVSNHR- 84

Matches

91;

Conservative

52;

Score 98; DB ( Pred. No. 0.59) 52; Mismatches

DB 6;

Length 668;

157;

Indels 138; Gaps

Query Match Best Local Similarity

4.5%;

| 45                   | 44                   | 43                   | 42               | 41               | 40                   | 39                   | 38                | 37                 | 36                 | 35                | 34                | 33               | 32                 | 31              | 30                   | 29                   | 28               | 27              | 26              |
|----------------------|----------------------|----------------------|------------------|------------------|----------------------|----------------------|-------------------|--------------------|--------------------|-------------------|-------------------|------------------|--------------------|-----------------|----------------------|----------------------|------------------|-----------------|-----------------|
| 81.5                 | 81.5                 | 81.5                 | 82               | 82               | 82                   | 82                   | 82.5              | 82.5               | 82.5               | 82.5              | 82.5              | 82.5             | 83                 | 83.5            | 83.5                 | 83.5                 | 84               | 84              | 84.5            |
| 3.7                  | 3.7                  | 3.7                  | 3.7              | 3.7              | 3.7                  | 3.7                  | 3.8               | 3.8                | 3.8                | 3.8               | 3.8               | ა<br>. გ         | 3.8                | 3.<br>8         | ა<br>. 8             | 3.8                  | 3.8              | 3.8             | 3.8             |
| 392                  | 377                  | 370                  | 5712             | 3073             | 371                  | 334                  | 1057              | 407                | 405                | 366               | 366               | 366              | 213                | 674             | 297                  | 264                  | 2348             | 298             | 2256            |
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| US-11-096-568A-29673 | US-11-096-568A-28962 | US-11-096-568A-28963 | US-11-143-980-47 | US-11-143-980-50 | US-11-096-568A-10348 | US-11-096-568A-10349 | US-10-330-773-253 | US-11-087-099-5591 | US-11-087-099-1566 | US-11-000-463-882 | US-11-000-463-410 | US-10-329-258-27 | US-10-467-657-3394 | US-11-167-048-1 | US-11-096-568A-21267 | US-11-096-568A-21268 | US-10-450-224A-2 | US-11-179-977-6 | US-11-144-368-4 |
| Sequence             | Sequence             | Sequence             | Sequence         | Sequence         | Sequence             | Sequence             | Sequence          | Sequence           | Sequence           | Sequence          | Sequence          | Sequence         | Sequence           | Sequence        | Sequence             | Sequence             | Sequence         | Sequence        | Sequence        |
| 29673, A             | 28962, A             | 28963, A             | 47, Appl         | 50, Appl         | 10348, A             | 10349, A             | 253, App          | 5591, Ap           | 1566, Ap           | 882, App          | 410, App          | 27, Appl         | 3394, Ap           | 1, Appli        | 21267, A             | 21268, A             | 2, Appli         | 6, Appli        | 4, Appli        |

## ALIGNMENTS

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; ORGANISM: Corynebacterium glutamicum US-10-454-437-118
                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: US 60/141031
PRIOR FILING DATE: 1999-06-25
PRIOR APPLICATION NUMBER: DE 19931636.8
PRIOR FILING DATE: 1999-07-08
PRIOR APPLICATION NUMBER: DE 19932125.6
PRIOR APPLICATION NUMBER: DE 19932126.4
PRIOR APPLICATION NUMBER: DE 19932127.2
PRIOR APPLICATION NUMBER: DE 19932127.2
PRIOR APPLICATION NUMBER: DE 19932127.2
PRIOR APPLICATION NUMBER: DE 19932127.2
PRIOR APPLICATION NUMBER: DE 19932129.9
PRIOR APPLICATION NUMBER: DE 19932129.9
PRIOR APPLICATION NUMBER: DE 19932129.9
PRIOR APPLICATION NUMBER: DE 19932226.0
PRIOR APPLICATION NUMBER: DE 19932226.0
PRIOR APPLICATION NUMBER: DE 19932226.0
PRIOR PILING DATE: 1999-07-19
PRIOR PILING DATE: 1999-07-14
PRIOR APPLICATION NUMBER: DE 19932920.6
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                                                                                     NUMBER OF SEQ ID NOS: 442
SEQ ID NO 118
LENGTH: 668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
APPLICANT: Pompejus, Markus
APPLICANT: Kroger, Burkhard
APPLICANT: Schroder, Hartwi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 118, Appropriate Publication No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Haberhauer, Gregor
TITLE OF INVENTION: CORYNEBACTERIUM GLUTAMICUM GENES ENCODING PROTEINS
TITLE OF INVENTION: INVOLVED IN HOMEOSTASIS AND ADAPTATION
                                                                                                                                                                                            PRIOR FILING DATE: 1999-07-14 Remaining Prior Application d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILE REFERENCE: BGI-128CPCN
CURRENT APPLICATION NUMBER: US/10/454,437
CURRENT FILING DATE: 2003-06-13
                                                                 TYPE: PRT
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                                                                                                                                                                                            See File Wrapper or PALM
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Sequence 6, Application US/11186999

Publication No. US20060019364A1

GENERAL INFORMATION:

APPLICANT: Bristol-Myers Squibb Company

TITLE OF INVENTION: ACETYL COA CARBOXYLASE 2 SEQUENCES AND METHODS

FILE REFERENCE: BMS DOCKET Number 10245 NP

CURRENT APPLICATION NUMBER: US/11/186,399

CURRENT FILING DATE: 2005-07-21

NUMBER OF SEQ ID NOS: 34

SOFTWARE: Patentin version 3.2

SEQ ID NO 6

LENCTH: 2458

TYPE: PRT

ORGANISM: Homo sapiens
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US-11-186-999-6
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                                                                RIPVRAVWAGWGHASENPKLPELLCKNGVAFLGPPSE----AMWALGDKIASTVVAQTLQ
                                                                                                RHPEPRPW---
                                                                                                                              RAIRFVVMVTPEDLKANAEYIKMADHYVPVPGGP------NNNYANVELIVDIAK 340
                                                                                                                                                                                              ---TVASPAEFVTRYGGDRVIEKVLIANNGI-----AAVKCMRSIRRWAYEMFRNE
                                                                                                                                                                                                                            ISQEVAAGLEF---YGNRRWLEK----PSGFFAQPPPLTEVAVRKVKDRRRSFYRIF---
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                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                        4.4%; Score 96; DB 7; Length 2458;
20.6%; Pred. No. 5.2;
ative 46; Mismatches 131; Indels 182;
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                                                                                              ----LVCVHGTEMGRAPLDLAVFRAWKLHDELGLNIV-----
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                                          Sequence 4, Application US/11186999

Publication No. US20060019364A1

GENERAL INFORMATION:
APPLICANT: Bristol-Myers Squibb Company
TITLE OF INVENTION: ACETYL COA CARBOXYLASE 2 SE(
FILE REFERENCE: EMS Docket Number 10245 NP
CURRENT APPLICATION NUMBER: US/11/186,999
CURRENT FILING DATE: 2005-07-21
NUMBER OF SEQ ID NOS: 34
SOFTWARE: PatentIn version 3.2
SEQ ID NO 4
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US-11-186-999-4
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US-11-179-977-4
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US-11-179-977-4
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TYPE: PRT
 TYPE: PRT
ORGANISM: Homo
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SOFTWARE: FastSEQ for Windows Version SEQ ID NO 4
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publication No. US20050249789A1
GENERAL INFORMATION:
APPLICANT: Genenoor International, Inc.
TITLE OF INVENTION: Alpha/Beta Hydrolase-Fold Enzymes
FILE REFERENCE: GC511-PCT
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CURRENT FILING DATE: 2005-07-12
NUMBER OF SEQ ID NOS: 21
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0.38;
SEQUENCES AND METHODS
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ORGANISM: Zea mays subsp. mays;
FEATURE:
NAME/KEY: misc_feature
LOCATION: (1)...(702)
OTHER INFORMATION: Ceres Seq. ID
US-11-096-568A-14646
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US-11-096-568A-14646
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                                                                                                                                                                                                                                                                                                                                                                                                                           FILE REFERENCE: 2750-1592PÚS2
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 14646
LENGTH: 702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 14646, Application US/11096568A
Publication No. US20060048240A1
GENERAL INFORMATION:
APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence-Determined DNA Fragments and Corresponding Polypeptides
TITLE OF INVENTION: Therby
                                                                                                                                                                                                  Query Match
Best Local Similarity
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Best Local
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                                            FRDEIVLLGLKARR-----PVSNHRVFERISQEVAAGLEFYGNRRWLEKPSGFFAQ---P 116
                                                                                        AADTQRRRRVLRLP---LHGDRAP-----
                                                                                                                                   ASDGTHERSAFRLSPPVLSGAMGPFMHTGLYVAQSWRDYLGQQPDKLPIARPTIALAAQA 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TVEYLYSQDGSFHFLELNPRLQV----EH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IADRL------VHPREQVTRLWEH 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YGNAVSLFGRDCSIQ----RRHQ-KIVEEAPATIAPLAIFEFMEQCAIRLAKTVGYVSAG 561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VADLIELLGRHCGLRHKDPRRHTVKMAEPIGRMISPLSLTPLVPMPG-----RFIYAG 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGKGIRKAESAEDFPILFRQVQSEIPGSPIFLMKL-----AQHARHLEVQILADQ 506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ----GTAQAVWDIRRLLSWIRSQEBESLIGLNGLSLGGYIASLVASLEEGLACAILGVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RIPVQAGWGHASENPKLPELLCKNGVAFLGPPSE----AMWALGDKIASTVVAQTLQVPT 396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RHPEPRPW------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RAIRFVVMVTPEDLKANAEYIKMADHYVPVPGGP-----NNNNYANVELIVDIAK 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ---TVASPAEFVTRFGGDRVIEKVLIANNGI------AAVKCMRSIRRWAYEMPRNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ISQEVAAGLEE---YGNRRWLEK----PSGFFAQPPPLTEVAVRKVKDRRRSFYRIF---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ALSLEAYLTTGEAETRVPTMRPSMS------GLHLVKRGREHKKLDLHRDF--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LPWSGSGLTVEWTEDDLQQGKRISVPEDVYDKGCVKDVDEGLEAAERIGFPLMIKASEGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LPMHGP-----RGQGLPKG-AVFPGEDVLD-----DVH------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----FDSGFTPHPGEPGSQRWLSYTANNREYA-----LLL
                                                                                                                                                                                                    4.2%;
                                                                                                                                                                             35;
                                                                                                                                                                                                  Score 93;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -LVCVHGTEMGRAPLDLAVFRAWKLHDELGLNIV-----MPV
                                                                                                                                                                             Mismatches 171;
                                                                                                                                                                                                                                                                                           no.
                                                                                                                                                                                                                                                                                             11049476
                                                                                                                                                                                                      1.8;
                                                                                        --APGARD----RPPRLPQGH---WRAARA 253
                                                                                                                                                                                                                       DB 7; Length 702;
--RPRLLORPPARHVRGRPP
                                                                                                                                                                             Indels 146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels 179;
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US-10-995-561-710
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Publication No. US20050272054A1

GENERAL INFORMATION:
APPLICANT: CARGILL, Michele et al.
APPLICANT: CARGILL, Michele et al.
TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
TITLE OF INVENTION: CARDIOVASCULAR DISORDERS AND DRUG RES
TITLE OF INVENTION: DETECTION AND USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 4.2%; Score 93; DB 6; Length 1096; Best Local Similarity 20.4%; Pred. No. 3.3; Matches 92; Conservative 47; Mismatches 131; Indels 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOPTWARE: FastSEQ for Windows Version
SEQ ID NO 710
LENGTH: 1096
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILE REFERENCE: CL001559
CURRENT APPLICATION NUMBER: US/10/995,561
CURRENT FILING DATE: 2004:11-24
NUMBER OF SEQ ID NOS: 85702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                          198
    457
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               280 VASLEE------GLACAILGVPVADLIELLGRHCGLR-HKDP--RRH-------
                                                                                                                                                                                                                                                                                                                                                                                                           89 ISQEVAAGLEF---YGNRRWLEK----PSGFFAQPPPLTEVAVRKVKDRRRSFYRIF---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LPRPRGGRRRPRDRRPLRLRRAARLRHDRAPQAGPGHRGAPR------AQLRRHQ 349
                                                                                                                                   MPVLPMHGP-----RGQGLPKG-AVFPGEDVLD-----DVH-----
                                                                                                                                                                                                                                                                        RAIRFVVMVTPEDLKANAEYIKMADHYVPVPGGP----
                                                                                                                                                                                                                                                                                                                                                                 ---TVASPAEFVTRFGGDRVIEKVLIANNGI------AAVKCMRSIRRWAYEMFRNE 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AQSWRDYL--GQQPDKLPIARPTIALAAQAFRDEIVLLGL-----KARRPVSNHRVFER 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TVKMAEPIGRMISPLSLTP----LVPMPGRFIYAGIADRL---VHPREQVTRLWEHWGKP 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LLPPVERVGGRGDGRGGGDRLLHDPRRLHLQRVRRAPGERADRDPPGRAHGPVHAPRRPA 501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GV-----QAPGDAARRVARGAGQGEDVAVRRAPQARRGRVGDGVGGRAGLL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PPLTEVAVRKVKDRR----RSFYRIFFDSGFTPHPGEPGSQRWLSYTANNREYALLLRHP 172
    EGGGGKGIRKAESAEDFPILFRQVQSEIPGSPIFLMKL----
                                          -----GTAQAVWDIRRLLSWIRSQEEESLIGLNGLSLGGYIASLVASLEEGLACAIL 292
                                                                                        VPTLPWSGSGLTVEWTEDDLQQGKRISVPEDVYDKGCVKDVDEGLEAAERIGFPLMIKAS
                                                                                                                                                                               RIPVQAVWAGWGHASENPKLPELLCKNGVAFLGPPSE----AMWALGDKIASTVVAQTLQ 396
                                                                                                                                                                                                                           RHPEPRPW------LVCVHGTEMGRAPLDLAVFRAWKLHDELGLNIV-----
                                                                                                                                                                                                                                                                                                                    ALSLEAYLTTGEAETRVPTMRPSMS------GLHLVKRGREHKKLDLHRDF--
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                                                                                                                                                                                                                                                                          ----NNNYANVELIVDIAK 340
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels 182;
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    -AQHARHLEVQIL
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RESULT 8
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US-11-186-999-13
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Best Local S
Matches 92
Sequence 16978, Application US/11096568A Publication No. US20060048240A1 GENERAL INFORMATION:
APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence-Determined DNA TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOPTWARE: PatentIn version 3.2
SEQ ID NO 13
LENGTH: 2458
TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 13, Application US/11186999
Publication No. US20060019364A1
GENERAL INFORMATION:
APPLICANT: Bristol-Myere Squibb Company
TITLE OF INVENTION: ACETYL COA CARBOXYLASE 2 SEQUENCES AND METHODS
FILE REFERENCE: BMS DOCKET Number 10245 NP
CURRENT APPLICATION NUMBER: US/11/186,999
CURRENT FILING DATE: 2005-07-21
NUMBER OF SEQ ID NOS: 34
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                                                                                                                                                                                                                                                   YAGIADRI------VHPREQVTRLWEH 366
                                                                                                                                                                                                                                                                                                                            GVPVADLIELLGRHCGLRHKDPRRHTVKMAEPIGRMISPLSLTPLVPMPG-----RFI 345
                                                                                                                                                                                                                                                                                                                                                                                                                                             VPTLPWSGSGLTVEWTEDDLQQGKRISVPEDVYDKGCVKDVDEGLEAAERIGFPLMIKAS
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                                                                                                                                                                                                                                                                                         ADQYGNAVSLFGRDCSIQ----RRHQ-KIVEEAPATIAPLAIFEFMEQCAIRLAKTVGYV
                                                                                                                                                                                                                                                                                                                                                                    EGGGGKGIRKAESAEDFPILFRQVQSEIPGSPIFLMKL-----AQHARHLEVQIL
                                                                                                                                                                                                                                                                                                                                                                                                        -----GTAQAVWDIRRLLSWIRSQEEESLIGLNGLSLGGYIASLVASLEEGLACAIL 292
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -----LVCVHGTEMGRAPLDLAVFRAWKLHDELGLNIV-----
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                                       Fragments and Corresponding Polypeptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
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APPLICANT: Bristol-Myers Squibb Company
TITLE OF INVENTION: ACETYL COA CARBOXYLASE 2 SE(
FILE REFERENCE: BMS Docket Number 10245 NP
CURRENT APPLICATION NUMBER: US/11/186,999
CURRENT FILING DATE: 2005-07-21
NUMBER OF SEQ ID NOS: 34
SOFTWARE: Patentin version 3.2
SEQ ID NO 11
LENGTH: 2458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; FEATURE: NAME/KEY: misc feature LOCATION: (1). (402); OTHER INFORMATION: Ceres US-11-096-568A-16978
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US-11-186-999-11
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                                    Query Match
Best Local Similarity
Matches 96; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 11, Application US/11186999 Publication No. US20060019364A1 GENERAL INFORMATION:
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Best Local Similarity
                                                                                                                           NAME/KEY: MISC_FEATURE LOCATION: (1)..(2458)
OTHER INFORMATION: Xaa
                                                                                                                                                                                    ORGANISM: Homo sapiens FEATURE:
                                                                                                                                                                                                                          TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  123 -TELGEQG------RVPVLLLKLDDPVPRRKPAIVFLHSSYKCKEWLRPLLEAYA 170
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 MASSASDGTHERS----AFRLSPPVLSG-----AMGPFMHTGLYVAQSWRDYLGQQP 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRP 335
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----PVADLIELLGRHCGLRHKDPRRHTVKMAEPIGRMI------SPLSLTPLV 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LVKLGDYLGEREDVDPSRVGITGESLGGMHAWFAAFVDTRYSVVVPIIGVQGFRWAIDNN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FRAW-----KLHDELGLNIVMPVLPMHGPRGQGLPKGAVFPGEDVLDDVHGTAQAVWD 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ERISQEVAAGLEFYGNRRWLEKPSGFFAQPP---PLTEVAVRKVKDRRRSFYRIFFDSGF 143
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                                       Conservative
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ON: Xaa
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                                    Score 91; DB Pred. No. 15; S; Mismatches
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                                       165;
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RESULT 10
US-10-454-437-228
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                                 Remaining Prior Ap
NUMBER OF SEQ ID N
SEQ ID NO 228
LENGTH: 299
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CURRENT APPLICATION NUMBER: US/10/454,437
CURRENT FILING DATE: 2003-06-13
PRIOR APPLICATION NUMBER: US 60/141031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Haberhauer, Gregor
TITLE OF INVENTION: CORYNEBACTERIUM GLUTAMICUM GENES ENCODING PROTEINS
TITLE OF INVENTION: INVOLVED IN HOMEOSTASIS AND ADAPTATION
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APPLICANT: Kroger, Burkhard
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                                                                                                             PRIOR FILING DATE: 1999-07-14
                   TYPE: PRT
ORGANISM: Corynebacterium
                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE: 1999-06-25
APPLICATION NUMBER: DE 19931636.8
FILING DATE: 1999-07-08
                                                                                                                                                                                    APPLICATION NUMBER: DE 19932226.0 FILING DATE: 1999-07-09
                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: DE 19932125.6 FILING DATE: 1999-07-09
                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: DE 19932127.2 FILING DATE: 1999-07-09
                                                                                                                               APPLICATION NUMBER: DE 19932922.2
                                                                                                                                                                                                                         APPLICATION NUMBER: DE 19932129.9 FILING DATE: 1999-07-19
                                                                                                                                                                                                                                                                                APPLICATION NUMBER: DE 19932128.0
                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: DE 19932126.4
                                                                                                                                                  FILING DATE: 1999-07-14
                                                                                                                                                                  APPLICATION NUMBER: DE 19932920.6
                                                                                                                                                                                                                                                              FILING DATE: 1999-07-09
                                                                                                                                                                                                                                                                                                                                         FILING DATE: 1999-07-09
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Schroder,
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                                                                                          Application data
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APPLICANT: Alexandrov, Nickolai et al.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 9373
                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 443
TYPE: PRT
ORGANISM: Triticum aestivum
FEATURE:
NAME/KEY: misc_feature
LOCATION: (1)...(443)
OTHER INFORMATION: Ceres Seq.
                                                                                                                                                                                                                                                                                                                                                   Matches
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                                                                                                 198 AWKLHDELGLNIVMFVLFMHGPRGQGLPKGAVFPGEDVLDDVHGTAQAVWDIRRLLSWIR
                                                                                                                                    120 WRDGKP------VLLRH----SW-----TGIGRAAELHVRVRVEADPRY 153
                                                                                                                                                                     145 PHPGEPGSORWLSYTANNREYALLLRHPEPRPWLVCVHGTEMGRAP-----LDLAVFR 197
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  231 PGEDVLDDVHGTAQAVWDIRRLLSWIRSQEEESLIGLNGLSLGGYIASLVA-SLEEG---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        176 PWLVCVHGTEMGRAPLDLAVFRAWKLHDELGLNIV-----MPVLPMHGPRGQGLPKGAVF 230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63;
                                                                                                                                                                                                                                                                               1
                                                                                                                                                                                                                                          96 --GLEFYGNRRWLEKPSGFFAQPPPLTEVAV-----RKVKDRRRSFYRIFFDSGFT 144
                                                                                                                                                                                                                                                                                                              44 LGQQPDKLPIARPTIALAAQAFRDEIVLLGLK---ARRPVSNHRVFERISQEVAA-----
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                                                                                                                                                                                                                                                                                                                                                                     Similarity
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                                                                   VFRFEDEVALN -- PQVVQLHGGASQ--
                                                                                                                                                                                                        EPGLKALPTSRWFRTPE-----PPYLEIAVYVSRRDGGGHCVGLKRRLVGAVRVDVGPE 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LASDISDLPPTTIVYGECDVLAHEVRAYGQALLEAGNSVTMTEFKGQIHAFINLGGISSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STPVLAHQVLIFPVTDVSTTSTPSYLTFGKDCYLTKDAMERYIEQYADGHDRTDPRLSPL
SQPDH---
                                 SQEEESLIGLNGLSLGGYIASLVASLEEGLACAILGVPVADLIELLGRHCGLRHKDPRRH 317
                                                                                                                                                                                                                                                                             VGQLGLRLPGAS-----ARKAFHCEIRLRGFPVQLAPVPLENSSEFHLDPHANAAVFSLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----LACAILGVPVADLIE------LLGRHCGLRHKDPRRHTVKMAEPIGR----MISPL
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                                                                                                                                                                                                                                                                                                                                                   Conservative
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LGGKYWSSSGSGEE-----
                                                                                                                                                                                                                                                                                                                                                                                                                                       Seq.
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Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                    Score 88;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                         ID no.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches 114;
                                                                                                                                                                                                                                                                                                                                                   Mismatches
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                                                                     -PIF
                                                                                                                                                                                                                                                                                                                                                                                    DB 7;
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                                                                                                                                                                                                                                                                                                                                                   115;
                                                                                                                                                                                                                                                                                                                                                                                      Length 443
-KETEMAG----RRRERKGW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 299;
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                                                                                                                                                                                                                                                                                                                                                   Indels 136;
                                                                  -SCKFIRDVRR----A
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RESULT 13
US-10-467-657-1554
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, NAME/KEY: misc feature
; LOCATION: (1). (443)
; OTHER INFORMATION: Ceres Seq.
US-11-096-568A-9375
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US-11-096-568A-9375
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Best Local S
Matches 83
Sequence 1554, Application US/10467657
Publication No. US20050260581A1
GENERAL INFORMATION:
APPLICANT: CHIRON SpA
APPLICANT: FONTANA Maria Rita
APPLICANT: PIZZA Mariagrazia
APPLICANT: MASIGNANI Vega
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 9375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 9375, Application US/11096568A Publication No. US20060048240A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence-Determined DNA Fragments and Corresponding Polypeptides
TITLE OF INVENTION: Therby
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TYPE: PRT
ORGANISM: Triticum aestivum
                                                                                                                                                                                                                          364
                                                                                                                                                                                           276
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          h 4.0%;
Similarity 22.4%;
B3; Conservative 3
                                                                                                                                                                                                                          WEHWGKPEIVW 374
                                                                                                                                                                                                                                                                                             TVKMAEPIGRMISPLSL-TPLVPM-----PGRFIYAGIADRLVHPREQVT---RL 363
                                                                                                                                                                                                                                                                                                                                                                SQEEESLIGLNGLSLGGYIASLVASLBEGLACAILGVPVADLIELLGRHCGLRHKDPRRH 317
                                                                                                                                                                                                                                                                                                                                                                                                                                  AWKLHDELGLNIVMPVLPMHGPRGQGLPKGAVFPGEDVLDDVHGTAQAVWDIRRLLSWIR 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PHPGEPGSQRWLSYTANNREYALLLRHPEPRPWLVCVHGTEMGRAP-----LDLAVFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EPGLKALPTSRWFRTPE-----PPYLEIAVYVSRRDGGGHCVGLKRRLVGAVRVDVGPE 119
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KVAIHDLSGSAVAAAFMATPFVPATGSDTVARSNPGAWLIV---
                                                                                                                                                                                          WQPWGRLE-AW 285
                                                                                                                                                                                                                                                             KVAIHDLSGSAVAAAFMATPFVPATGSDTVARSNPGAWLIV--
                                                                                                                                                                                                                                                                                                                                SQPDH------LGGKYWSSSGSGEE-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       --GLEFYGNRRWLEKPSGFFAQPPPLTEVAV-----RKVKDRRRSFYRIFFDSGFT
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Pred. No. 2.9;
7; Mismatches 115;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ID no. 16611697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   --VLLRH----SW-----TGIGRAAELHVRVRVEADPRY 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ----PGRFIYAGIADRLVHPREQVT---RL
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                                                                                                                                                                                                                                                                                                                                --KETEMAG-----RRRERKGW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels 136;
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                                                                                                                                                                                                                                                               RADTTGSSES
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                                                                                                                                                                                                                                                                                                                                                                                                  190
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, Sequence 33023, Application US/11096568A
, Publication No. US20060048240A1
, GENERAL INFORMATION:
, APPLICANT: Alexandrov, Nickolai et al.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: Sequence-Determined DNJ
TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 33033
LENGTH: 253
                                                                                                                                                                                                          Matches
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                                                                                                                                                                                                                                           Query Match
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TITLE OF INVENTION: GONOCOCCAL PROTEINS AND NUCLEIC ACIDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILE REFERENCE:
                                                                                                                                                                                                  4.0%;
Local Similarity 21.8%;
eB 43; Conservation
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                                     227
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       GLDWPG-
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CURRENT APPLICATION NUMBER: US/10/467,657
CURRENT FILING DATE: 2003-08-11
PRIOR APPLICATION NUMBER: GB-0103424.8
PRIOR FILING DATE: 2001-02-12
NUMBER OF SEQ ID NOS: 9218
SOFTWARE: SeqWin99, version 1.04
SEQ ID NO 1554
LENGTH: 621
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                TYPE: PRT
ORGANISM: Arabidopsis thaliana
FEATURE:
NAME/KEY: misc_feature
LOCATION: (1)...(253)
OTHER INFORMATION: Ceres Seq. ID no. 13601781
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     211 MPVLPMH-GPRGQ-GLPKGAVFPGEDVLDDVHGTA-----QAVWDIRR-----LLSW 255
                                                                                                                                          167 LLLRHPEPRPWLVCVHGTEMGRAPLDLAVFRAWKLHDELGLNIVMPVLPMHGPRGQGLPK 226
                                         GAVFPGEDVLDDVHGTAQAVWDIRRLLSWIRSQEEESLIGLNGLSLGG--YIASLVASLE 284
                                                                                                                                                                                                                                     PPLTEVAVRKVKDRRRSFYRI-----FFDS---GFTPHPGEPGSQRWLSYTANNREYA 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HCGLRHKDPRRHTVKMAEPIGRMISPLS----LTPLVPMPGRFIYAGIADRLVHP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IRSQEEESL-----IGLNGLSLGGYIASLVASLE-EGLACAILGVPVADLIEL----LGR 305
                                                                                           IKISOLEP-GFKALIPDLYRGKVGLDTA----
                                                                                                                                                                                      PSFSRLSVRSMAD--SAFRKIQIQRDDTTFDAYVVGKDDAPGIVVIQEWWGVDFEIKNHA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ----REQVTRLWEHWGKPEIVWYPGGHTG 381
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VRDLSERGMSSPKHIGLQGGSNGGLITAAAFVREPQSIGALVCEVPLTDMIRYPLLSAGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4.0%; Score 88; DB vilarity 25.2%; Pred. No. 4.5; Conservative 29; Mismatches
AIKDIRASVNWLKSNGSKK-VGVTGMCMGGALAIASSVLVPE 143
                                                                                                                                                                                                                                                                                                             Score 87.5;
Pred. No. 1.5
                                                                                                                                                                                                                                                                                    Mismatches
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                                                                                                                                                                                                                                                                                                                                   Length 253;
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; ORGANISM: Triticum aestivum; FEATURE; NAME/KEY: misc_feature; LOCATION: (1)...(383); OTHER INFORMATION: Ceres Seq. ID no. 14303558 US-11-096-568A-12774
Search completed: March 23, 2006, 06:29:40 Job time: 10.911 secs
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US-11-096-568A-12774
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Publication No. US20060048240A1

GENERAL INFORMATION:
APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence-Determined DNA Fragments and Corresponding Polypeptides
TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION UMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 12774
LENGTH: 383
TYPE: PRT
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Best Local S
Matches 78
                                                                                  247 NHCNLELYPEYIKHLKKFI-TAIEKSPPLKDDSPES 281
                                                                                                                    379 HTGFFQSRP-----VRRFVQAALEQSGLL--DAPRT 407
                                                                                                                                                               196 ----DIYKNIDKVALVKCPVLVIH-GTADDVVDCSHGR----ALWELSKVKYEPLWVKGG
                                                                                                                                                                                                     323 EPIGRMISPLSLTPLVPMPGRFIYAGIADRLV---HPREQVTRLWE-HWGKPBIVWYPGG
                                                                                                                                                                                                                                                147 NII-LYGOSVGSGPTLDLASRLPHLRAVVLHSPISS-----
                                                                                                                                                                                                                                                                                        263 SLIGLNGLSLGGYIASLVASLEEGLACAILGVPVADLIELLGRHCGLRHKDPRRHTVKMA 322
                                                                                                                                                                                                                                                                                                                                 100 SHLNVNLM------GYDYSGYGQSSGKPSE---QNTYADIEAAY---RCLIETYGASEE 146
                                                                                                                                                                                                                                                                                                                                                                   203 DELGLNIVMPVLPMHGPRGQGLPKGAVFPGEDVLDDVHGTAQAVWDIRRLLSWIRSQEEE 262
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                                                                                                                                                                                                                                                                                                                                                                                                               45 VPRRGGVBARRLPTKRGSEVVAMYVRQPGARLTLLYSHGNAADLGQM-YELFV----ELS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       89 ISQEVAAGLEFYGNRRWLEKPSGFFAQPPPLTEVAVRKVKDRRRSFYRIFFDSGFTPHPG 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4 VASTVAARFAFFP-----PSPPSYGVEPPPSPAAAAA------DGAVVELSG
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1: geneseqp1980
2: geneseqp1990
3: geneseqp2000
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

| SUMMARIES |
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|               |       | <b>*</b> |        |            | SCHIFFERES |                    |
|---------------|-------|----------|--------|------------|------------|--------------------|
| Result<br>No. | Score | Query    | Length | Ba         | ;          |                    |
| ۲             | 637   | 100.0    | 120    | <u>.</u> ه | ADI37309   | Adi37309 M. tuberc |
| 2             | 80    | 12.6     | 551    | 8          | ADX68544   | Pla                |
| ω             | 79.5  | 12.5     | 468    | N          | AAW71633   | Omega              |
| 4             | 78    | 12.2     | 310    | 7          | ABO79202   |                    |
| u             | 77.5  | 12.2     | 456    | ი          | ABU40175   | Abu40175 Protein e |
| 6             | 75    | 11.8     | 510    | 7          | AB076512   | Abo76512 Pseudomon |
| 7             | 75    | 11.8     | 594    | 8          | ADG22732   | Adg22732 Cyanophag |
| 8             | 75    | 11.8     | 8805   | 4.         | ABB67112   |                    |
| 9             | 74.5  | 11.7     | 223    | œ          | ADQ65060   |                    |
| 10            | 74    | 11.6     | 330    | 7          | AB077614   |                    |
| 11            | 74    | 11.6     | 535    | σ          | ABU34179   | Abu34179 Protein e |
| 12            | 73    | 11.5     | 69     | 4          | ABB39158   |                    |
| 13            | 73    | 11.5     | 69     | 4          | AAM32650   | Aam32650 Peptide # |
| 14            | 73    |          | 69     | 4.         | AAM72398   | Aam72398 Human bon |
| 15            | 73    | 11.5     | 69     | 4.         | AAM59811   | Aam59811 Human bra |
| 16            | 73    |          | 69     | 4.         | ABG54088   | Abg54088 Human liv |
| 17            | 73    |          | 69     | σ          | ABG42216   | Abg42216 Human pep |
| 18            | 73    | 11.5     | 258    | 4.         | AAG75597   | Human              |
| 19            | 73    | 11.5     | 361    | 8          | ADJ67604   | Adj67604 Human ova |
| 20            | 73    | 11.5     | 449    | 7          | ADB64595   | 품                  |
| 21            | 73    | 11.5     | 715    | 4.         | AAU34857   | Aau34857 E. coli c |
| 22            | 73    | 11.5     | 715    | σ          | ABU47919   | Abu47919 Protein e |
| 23            | 73    | 11.5     | 715    | σ          | ABU15299   | Abu15299 Protein e |
| 24            | 73    |          | 715    | 8          | ADS45230   | Ads45230 Bacterial |
|               |       |          |        |            |            |                    |

The present invention describes polypeptides or their fragments, which are expressed during the latent stage of a mycobacterial infection, and/or nucleic acids encoding the polypeptides, which are useful for creating a therapeutic vaccine against tuberculosis. Also described: (1 a therapeutic vaccine against tuberculosis comprising one or more polypeptides; (2) a method for treating an animal, including a human being, with tuberculosis caused by virulent mycobacteria, e.g. by Mycobacterium tuberculosis, M. africanum or M. bovis; (3) a method for

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mmunising an animal, including a

human being,

Use of one or more polypeptides or their fragments, which are expressed during the latent stage of the mycobacterial infection, and/or nucleic acids encoding the polypeptides, for a therapeutic vaccine against

Claim 3; SEQ ID NO 30; 76pp; English.

tuberculosis.

WPI; 2004-122778/12. N-PSDB; ADI37354.

|  | 30<br>30<br>30<br>31   |
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| 73<br>72.5<br>72.5<br>72.5<br>72.7<br>72<br>72<br>72<br>72<br>72<br>72<br>72<br>72<br>72<br>72<br>72<br>72<br>72   | 73<br>73<br>73<br>73   |
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| ADA45190<br>AAU5167<br>ABM48206<br>ABG14735<br>ABA79725<br>AEA48218<br>AEA80310<br>AEA80314<br>AEA80324<br>AEA48827<br>AEA48827<br>ABA78935<br>AB78096<br>AAR88406<br>AAR88406<br>AAR88406 | AAB95634<br>ADB79917<br>ABM81904<br>ADS88375<br>ABB11784<br>ADS12087<br>AEA20840   |
| Propio<br>Propio<br>Propio<br>Novel<br>S. gri<br>S. gri<br>Strept<br>S. gri<br>Mature<br>Strept<br>Strept<br>Thermu<br>N. gon<br>Tricho  | Aab95634 Human pro<br>Adb79917 Human put<br>Abm81904 Tumour-as<br>Ads88275 Human pro<br>Abb11784 Human sec<br>Ads12057 Human the<br>Aea20840 Novel hum |

## ALIGNMENTS

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           M. tuberculosis low oxygen induced antigen Rv2628 SEQ ID
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RESULT 2
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        plant protectant; plant growth regulant; gene therapy; plant; recombinant DNA construct; physical array; plant breeding marker; cold tolerance; heat tolerance; drought tolerance; herbicide tolerance; extreme osmotic condition; pathogen tolerance; pest tolerance; growth rate; cell cycle pathway; disease resistance; galactomannan production; lignin production; plant growth regulator; yield; plant growth; plant development; seed oil; protein yield;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 caused by virulent mycobacteria; (4) a method of diagnosing tuberculosis caused by virulent mycobacteria in an animal, including a human being; (5) a method for diagnosing previous or ongoing infection with a virulent mycobacterium; and (6) a method of diagnosing Mycobacterium tuberculosis infection in a subject. The polypeptides have antibacterial activities, and can be used in vaccines and in gene therapy. The polypeptides are useful for the manufacture of a therapeutic vaccine for treating an individual who is infected by a virulent mycobacterium, e.g. M. tuberculosis, and who is not vaccinated with BCG against tuberculosis. The present sequence represents a low oxygen induced antigen, which is
                   New recombinant DNA construct, useful for improving plant tolerance cold, heat, drought, herbicides, extreme osmotic conditions, pathogo pests, for conferring increased resistance to plant disease, or for
                                                                                                                     WPI; 2004-180133/17.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    yield; plant growth; plant protein content.
improving yield
                                                                                                                                                                                                                                                                                                                                                                                                    06-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-APR-2003; 2003US-00425114.
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KOVALIC D K.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    enzyme; detection; identification;
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Matches 30
                          The invention relates to Pseudomonas aeruginosa polypeptides and the polynucleotides encoding them. The sequences are useful in diagnostis and therapy of pathological conditions, as molecular targets for diagnostics, prophylaxis and treatment of pathological conditions resulting from a bacterial infection, for evaluating a compound, such as a polypeptide, for the ability to bind a P. aeruginosa nucleic acid, as components of effective antibacterial targets, as targets for antibacterial drugs, including anti-P. aeruginosa drugs, as templates for recombinant production of P. aeruginosa drugs, as templates for recombinant components for diagnosis and/or treatment of P. aeruginosa-caused infection, and in detection of P. aeruginosa sequences or other sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present sequence represents a protein from ORF1 of a new nucleic aci which encodes enzymes which participate in the biosynthesis of Omega-cyclohexane fatty acid. The nucleic acid is isolated from Alicyclobacillus acidocaldarius. The present invention also describes primers and probes containing all or part of the nucleic acid from Alicyclobacillus acidocaldarius. The primers and probes may be used for detection and/or identification of a microorganism of genus Alicyclobacillus. The method can detect and identify Alicyclobacillus genus rapidly and easily
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Novel isolated nucleic acid encoding Pseudomonas aeruginosa polypeptide, useful as molecular targets for diagnostics, prophylaxis and treatment of pathological conditions resulting from bacterial infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rubenfield MJ,
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27-JUL-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                                    Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18-FEB-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacterial infection; Pseudomonas aeruginosa infection; antibacterial.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pseudomonas aeruginosa polypeptide #11377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-JUL-2004
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (GENO-) GENOME
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                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
   species
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98US-0094190P.
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                                                                                                                                                                                                                                                                                                                                                                                                                    ID NO 27948;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred.
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Pred. No. 1.
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                                                                                                                                                                                                                  ABO84396 represent P. aeruginosa polypeptides of the invention. sequence data for this patent did not form part of the printed specification but was obtained in electronic format from USPTO a
                                                                                                                                                                          Sequence
                                                                                                                                                                                                    seqdata.uspto.gov/sequence.html
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                           GDEITSTVSGWLSELGTQSPLADELARAVRIGDWPAAYAIGEHL
                                                        AGRRCAGAKGASGAAGRHG-----
                                                                                   SGIRAVGPYAWAGRCGRIGRWGVHQEAMMNLAIWHPRKVQSATIYQVTDRSHDGRTARVP
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06-SEP-2001; 2001US-00948993.
25-OCT-2001; 2001US-0342923P.
08-FEB-2002; 2002US-00072851.
06-MAR-2002; 2002US-0362699P.
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Wang Wall ָט נָי 2003-029926/02. Zamudio C, Trawick JD, ດີ ໃ Haselbeck R, Yamamoto R, æ Ohlsen Forsyth 3 2 Zyskind Xu HH;

(ELIT-)

ELITRA PHARM

INC.

Malone Carr

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New antisense nucleic acids, useful for identifying proteins or a for homologous nucleic acids required for cellular proliferation isolate candidate molecules for rational drug discovery programs screening ដ

Claim SEQ ID ö 68099; 1766pp; English

encoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) a host cell containing the vector; (3) an isolated polypeptide or its fragment whose expression is inhibited by the antisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular proliferation or the activity of a gene in an operon required for proliferation; (7) identifying a compound that influences the activity of the polypeptide; (8) inhibiting cellular proliferation; (9) identifying a compound that influences the activity of the polypeptide in an operon required for the activity of the polypeptide in an operon required for the 6213 antisense sequences given in the specification where expression of the nucleic acid inhibits proliferation of a cell. Also included are:

(1) a vector comprising a promoter operably linked to the nucleic acid The invention relates to an isolated nucleic acid comprising any one of the gene for prol proliferation, or that has o r an activity against or that inhibits cell a biological pathway (8)

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RESULT 6
ABO76512
   PS X P P P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P X P P
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Best Local S
Matches 30
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Disclosure; SEQ ID NO 25258; 455pp; English
                                                            Novel isolated nucleic acid encoding Pseudomonas aeruginosa polypeptide, useful as molecular targets for diagnostics, prophylaxis and treatment of pathological conditions resulting from bacterial infection.
                                                                                                                                                                                                     N-PSDB;
                                                                                                                                                                                                                                                                                            Rubenfield MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                            18-FEB-1998;
27-JUL-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18-FEB-1999;
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                                                                                                                                                                                                                                                                                                                                                               (GENO-) GENOME
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                                                                                                                                                                                                  2003-615309/58.
DB; ABD10083.
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98US-0094190P.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The invention relates to Pseudomonas aeruginosa polypeptides and the CC polymucleotides encoding them. The sequences are useful in diagnosis and CC therapy of pathological conditions, as molecular targets for diagnostics, CC prophylaxis and treatment of pathological conditions resulting from a batterial infection, for evaluating a compound, such as a polypeptide, CC for the ability to bind a P. aeruginosa nucleic acid, as components of effective antibacterial targets, as targets for antibacterial drugs, including anti-P. aeruginosa drugs, as targets for recombinant CC production of P. aeruginosa drugs, as targets for recombinant CC production of P. aeruginosa drived peptides or polypeptides, as target CC components for diagnosis and/or treatment of P. aeruginosa-caused infection, and in detection of P. aeruginosa sequences or other sequences CC of Pseudomonas species using biochip technology. Sequences ABO67826-CC ABO84395 represent P. aeruginosa polypeptides of the invention. Note: The sequence data for this patent did not form part of the printed precision but was obtained in electronic format from USPTO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
The invention relates to the entire genome protein encoded by it. Genes isolated from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              genome; cyanophage; 2; 6-diaminopurine; chemotherapy; AIDS
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                                                    Claim 6;
                                                                                                                                                            N-PSDB; ADG22255.
                                                                                                                                                                            WPI; 2004-045746/05.
                                                                                                                                                                                                             Marliere P, Ka
Weissenbach J,
                                                                                                                                                                                                                                                            (INSP ) INST PASTEUR.
(CNRS ) CNRS CENT NAT RECH SCI.
(GENO-) GENOSCOPE CENT NAT SEQUENCAGE GRP INTERE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cyanophage S-2L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cyanophage S-2L encoded protein #477
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADG22732;
                                                                                                    New genomic sequence for cyanophage S-2L, useful for identifying genes
for synthesis of 2,6-diaminopurine bases or polynucleotides containing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seqdata.uspto.gov/sequence.html
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ---PGDEITSTVSGWLSELGTOSP-LADELARAVRIGDWPAAYAI---GEHLSVEIAV 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        510 AA;
                                                    SEQ ID NO 478; 423pp; French.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                             Kaminski PA,
J, Saurin W,
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Robert C, Vico
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Pred. No. 7.1;
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ico V;
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of cyanophage the genome of
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The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL01840-ABL16175) and the encoded proteins (ABB57737-ABB72072). The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila melanogaster
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N-PSDB; ABL11215.
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11-JUL-2000; 2000US-00614150
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                                                                                                                                                                                                                                                                                                                                                                                 Disclosure; SEQ ID NO 28128; 21pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  genes from Drosophila
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                                                                            The invention relates to 2495 novel polynucleotides (I) and their encoded polypeptides, sequences hybridizing to these nucleotides, sequences encoding partial polypeptides and sequences having 70% or 90% identity to the nucleotide and protein sequences. The nucleotides and polypeptides are useful as diagnostic markers or therapeutic target for the diseases or morbid states. They are also useful for treating osteoporosis, neurological diseases, Alzheimer's diseases, Parkinson's diseases, dementia and various cancers. This sequence corresponds to a protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  osteopathic; neuroprotective; nootropic; antiparkinsonian; cytostatic; gene therapy; diagnostic marker; morbid state; osteoporosis; neurological disease; Alzheimer's disease; Parkinson's disease; dementia;
                                              Sequence
                                                                                                                                                                                                                                                                                                    Isogai
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09-MAY-2003; 2003JP-00131392.
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                                                                                                                                                                                                                  Novel 2495 cDNA, useful for treating osteoporosis, neurological diseases, Alzheimer's diseases, Parkinson's diseases, dementia and various cancers.
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            11.7%;
27.3%;
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ABO77614
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Matches
                                                                                                        Query Match
                                                                                                                                      Sequence 330 AA;
                                                                                                                                                                                          bacterial infection, for evaluating a compound, such as a polypeptide, for the ability to bind a P. aeruginosa nucleic acid, as components of effective antibacterial targets, are templates for antibacterial drugs, including anti-P. aeruginosa drugs, as templates for recombinant production of P. aeruginosa-derived peptides or polypeptides, as target components for diagnosis and/or treatment of P. aeruginosa-caused infection, and in detection of P. aeruginosa sequences or other sequences of Pseudomonas species using biochip technology. Sequences ABO67826-ABO84396 represent P. aeruginosa polypeptides of the invention. Note: The sequence data for this patent did not form part of the printed
                                                                                                                                                                                specification but was obtained in electronic format from
                                                                                                                                                                                                                                                                                                                                                 The invention relates to Pseudomonas aeruginosa polypeptides and the polynucleotides encoding them. The sequences are useful in diagnosis and therapy of pathological conditions, as molecular targets for diagnostics, prophylaxis and treatment of pathological conditions resulting from a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel isolated nucleic acid encoding Pseudomonas aeruginosa polypeptide, useful as molecular targets for diagnostics, prophylaxis and treatment of
                                                                                                                                                               seqdata.uspto.gov/sequence.html
                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rubenfield MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABO77614;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         pathological conditions resulting from bacterial infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-FEB-1998;
27-JUL-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacterial infection; Pseudomonas aeruginosa infection; antibacterial.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pseudomonas aeruginosa polypeptide #9789.
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                                                                          31;
                                            2 STORPRHSGIRAVGPYAWA-----GRCGRIGRW------GVHQEAMMNLAIWH
                                                                                         Similarity
               TSRRPRGPGLPMAAPVAWARRRLGSGRSERSGRWPSRVCTTSMPTPRAQSSSAWIAAIGA
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                                                                           Conservative
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98US-0094190P.
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                                                                                      11.6%;
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                   CC the 6213 antisense sequences given in the specification where expression cC (1) a vector comprising a promoter operably linked to the nucleic acid conding a polypeptide whose expression is inhibited by the antisense cC nucleic acid; (2) a host cell containing the vector; (3) an isolated cC encoding a polypeptide whose expression is inhibited by the antisense cC nucleic acid; (4) an antibody capable of specifically binding cell containing the vector; (3) an isolated containing the vector; (3) an isolated containing the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular cC proliferation or the activity of a gene in an operor required for cc proliferation; (7) identifying a compound that influences the activity of compound that influences the activity of compound that influences the activity of compound that influences the activity of compound that influences the activity of compound that influences the activity of compound that influences the activity of compound that influences the activity of compound that influences the activity of compound that influences the biological pathway (6) compound that influences the biological pathway in which a proliferation, or that influences the biological pathway in which a proliferation-required gene or its gene product lies or a gene on which the test compound that inhibits proliferation of an organism acts; (9) manufacturing an antibiotic; (10) profiling a cc compound that inhibits the screen of the strains is present in a culture or collection of confidence is overexpressed or underexpressed; cludentifying the target of a compound that inhibits the cc identifying or acreaming the target of a compound that inhibits the confidence is confident and confidence and confidence and confidence and confidence and confidence and confidence and confidence and confidence and confidence and confidence and confidence and confidence and confidence and confidence and confidence and confidence and confidence and confidence and confidence and confidence and confidence an
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06-SEP-2001; 2001US-00948991.

25-OCT-2001; 2001US-0342923P.

08-FEB-2002; 2002US-00072851.

06-MAR-2002; 2002US-0362699P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 25; SEQ ID NO 62103; 1766pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mycobacterium avium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to an isolated nucleic acid comprising any the 6213 antisense sequences given in the specification where exp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to
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Trawick JD,
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Forsyth
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30-JUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-00632366.
21-SEP-2000; 2000US-0234687P.
27-SEP-2000; 2000US-0236359P.
04-OCT-2000; 2000GB-00024263.
The invention relates to a single exon nucleic acid probe for measuring human gene expression in a sample derived from human foetal liver. The single exon nucleic acid probes may be used for predicting, measuring and displaying gene expression in samples derived from human fetal liver. The present sequence is a peptide encoded by a single exon nucleic acid probe of the invention. Note: The sequence data for this patent did not form
                                                                                                                                                                                       Claim 27;
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expression in human fetal liver.
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30-JUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-00632366.
21-SEP-2000; 2000US-0234687P.
27-SEP-2000; 2000US-02343599.
04-OCT-2000; 2000GB-00024263.
                                                                The present invention relates to single exon nucleic acid probes (SENP: see ARI31315-AAI57546). The present sequence is a peptide encoded by one such probe. The probes are useful for producing a microarray for predicting, measuring and displaying gene expression in samples derived from human placenta. The probes are useful for antenatal diagnosis of the probes are useful for antenatal diagnosis of
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28.1%;
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RESULT 14
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RESULT 15
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ID AAM59
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Best Local (
                                                                                                                                                                                                                                                                                                                                                                                Matches
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26-MAY-2000; 2000US-0207456P.
30-JUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-00632366.
21-SEP-2000; 2000US-0234687P.
27-SEP-2000; 2000US-02346359.
04-OCT-2000; 2000GB-00024263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present invention provides a number of single exon nucleic acid probes which are derived from genomic sequences expressed in the human bone marrow. They can be used no measure gene expression in bone marrow samples, which may enable the improved diagnosis and treatment of cancers such as lymphoma, leukaemia and myeloma. The present sequence is a protein encoded by one of the probes of the invention
                                   AAM59811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 4; SEQ ID NO 32704; 658pp + Sequence Listing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human genome-derived single exon nucleic acid probes useful for analyzing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2001-488900/53.
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                                                                                                                                                                                                                  114 VEIA 117
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                                standard;
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                                protein; 69 AA.
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Pred. No. 0.92
15; Mismatches
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                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                       Example 4;
                                                                                                                                                                                                                                                                                                            Single exon nucleic acid probes for analyzing gene expression in human
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03-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     04-FEB-2000;
26-MAY-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human; brain expressed exon; gene expression analysis; probe; microarray; Alzheimer's disease; multiple sclerosis; schizophrenia; epilepsy; cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human brain expressed single exon
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                                                                                                           Local Similarity
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                       114 VEIA 117
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                                                                     54 QVTDRSHDGRTARVPGDEITSTVSGWLSELGTQSPLADELARAVRIGDWPAAYAIGEHLS
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VQVA
                                               ELSDVSQGGSKATTP----ASTANSDVATIPTDTPLKEENEGFVKVTDAPNKSEISKHIE 57
                                                                                                                                               69 AA;
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                                                                                                                                                                                                                                                                      SEQ ID NO 31916; 650pp + Sequence Listing; English
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; 2000US-0207456P.
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GenCore version 5.1.7

Title:

Perfect score: Sequence: US-10-617-038-30
637
1 MSTQRPRHSGIRAVGPYAWA......DWPAAYAIGEHLSVEIAVAV 120

Scoring table: BLOSUM62 Gapop 10.0 , Gapext 0.5

Searched:

283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database : PIR\_80:\*
1: pir1:\*
2: pir2:\*
3: pir3:\*
4: pir4:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

| 29                 | 28                 | 27                 | 26     | 25     | 24     | 23     | 22                | 21                 | 20                 | 19                 | 18                 | 17                 | 16     | 15     | 14                | 13                 | 12                 | 11                 | 10                 | 9                  | 8                  | 7                  | σ,     | UI                 | 4                  | ω                  | N      | ۲       | NO.         | Result      |
|--------------------|--------------------|--------------------|--------|--------|--------|--------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------|--------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------|--------------------|--------------------|--------------------|--------|---------|-------------|-------------|
| 67.5               | 67.5               | 67.5               | 83     | 68     | 83     | 68.5   | 68.5              | 68.5               | 69                 | 69.5               | 69.5               | 69.5               | 70.5   | 71     | 71                | 71                 | 72                 | 72                 | 72.5               | 73                 | 73                 | 73                 | 74     | 79.5               | 80.5               | 83.5               | 85.5   | 637     | Score       |             |
| 10.6               | 10.6               | 10.6               | 10.7   | 10.7   |        | 10.8   |                   |                    | •                  | 10.9               | •                  | •                  |        | 11.1   | 11.1              | 11.1               | 11.3               | 11.3               |                    | 11.5               |                    |                    | μ      |                    | 12.6               | 13.1               | 13.4   | 100.0   | Match I     |             |
| 719                | 414                | 331                | 418    | 244    | 244    | 4848   | 319               | 267                | 319                | 546                | 411                | 235                | 225    | 704    | 541               | 472                | 511                | 457                | 558                | 766                | 715                | 715                | 609    | 691                | 520                | 691                | 691    | 120     | Length [    |             |
| Ν                  | N                  | N                  | N      | N      | N      | N      | N                 | N                  | N                  | N                  | N                  | N                  | N      | N      | N                 | N                  | N                  | N                  | N                  | N                  | N                  | ۳                  | N      | N                  | N                  | N                  | N      | N       | BB          |             |
| T35189             | Н95999             | S44962             | G87581 | AC1671 | AC1299 | T30289 | T36845            | T17476             | S62196             | T31255             | F86188             | D70948             | A75257 | S75260 | AF0666            | G70932             | JC2294             | A53669             | S57953             | JC5958             | AE1021             | DEECFS             | G87496 | S39867             | G98145             | B81937             | G81167 | C70573  | ID          |             |
| probable ATP-depen | probable N-carbamy | lmbZ protein - Str |        |        | пď     |        | probable membrane | probable enoy1-CoA | hypothetical prote | phhR protein homol | protein T25N20.2 [ | hypothetical prote |        |        | probable exported | probable monoxygen | carboxypeptidase ( | streptogrisin C (E | C4BP protein alpha | sperm surface prot | formate dehydrogen | formate dehydrogen |        | competence protein | probable aminotran | competence protein |        | thetica | Description | •<br>-<br>- |

| 66 1               |                    | 66 1               |                    |                    |                    |                    | 66 1               |                    | 66.5 1             |                    |                    | 67 1               | 67 1              | 67 1               | 67 1               |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|
| 0.4                | 0.4                | 10.4               | 0.4                | 0.4                | 0.4                | 0.4                | 0.4                | 0.4                | 0.4                | 0.4                | 0.4                | 0.5                | .5                | 0.5                | 0.5                |
| 715                | 588                | 365                | 365                | 282                | 275                | 271                | 168                | 543                | 439                | 352                | 320                | 2514               | 1024              | 715                | 715                |
| N                  | N                  | N                  | N                  | N                  | N                  | N                  | 1                  | N                  | N                  | N                  | N                  | ۲                  | 2                 | N                  | ν                  |
| 883222             | S70900             | C85772             | G90923             | T36506             | G87465             | T35065             | WSWLB5             | T50905             | D72716             | C97496             | AF2714             | MNWVN2             | S38048            | A86102             | E91261             |
| regulatory protein | ABC-type transport | N-ethylmaleimide r | N-ethylmaleimide r | probable ABC-trans | mazg protein (impo | tryptophan synthas | E5 protein - human | protochlorophillid | hypothetical prote | hypothetical prote | conserved hypothet | nonstructural poly | ubiquitin-protein | formate dehydrogen | formate dehydrogen |

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#### ALIGNMENTS

| RESULT 2  G81167  G81167  competence protein Coma NMB0702 [imported] - Neisseria meningitidis (strain MC58 serogro competence protein Coma nmb0702 [imported] - Neisseria meningitidis (strain MC58 serogro C;Species: Neisseria meningitidis C;Species: Neisseria meningitidis C;Date: 31-Mar-2000 #sequence_revision 31-Mar-2000 #text_change 09-Jul-2004 C;Accession: G81167 A;Tettelin, H.; Saunders, N.J.; Heidelberg, J.; Jeffries, A.C.; Nelson, K.E.; Eisen, J.A Hickey, E.K.; Haft, D.H.; Salzberg, S.L.; White, O.; Fleischmann, R.D.; Dougherty, B.A.; ri, H.; Qin, H.; Vanathevan, J.; Gill, J.; Scarlato, V.; Masignani, V.; Pizza, M. Science 287, 1809-1815, 2000 A;Authors: Grandi, G.; Sun, L.; Smith, H.O.; Fraser, C.M.; Moxon, E.R.; Rappuoli, R.; Ve A;Title: Complete genome sequence of Neisseria meningitidis serogroup B strain MC58. A;Reference number: A81000; MUID:20175755; PMID:10710307 A;Accession: G81167 A;Scatus: preliminary A;Molecule type: DNA | Qy  1 MSTQRPRHSGIRAVGPYAWAGRCGRIGRWGVHQEAMMNLAIWHPRKVQSATIYQVTDRSH 60 | A;Gene: Rv2628 A;Gene: Rv2628 C;Superfamily: Mycobacterium tuberculosis hypothetical protein Rv2628 C;Superfamily: Mycobacterium tuberculosis hypothetical protein Rv2628 Query Match Query Match Best Local Similarity 100.0%; Pred. No. 3.9e-57; Best Local Similarity 100.0%; Pred. No. 3.9e-57; Matches 120; Conservative 0; Mismatches 0; Indels 0; Gaps 0; | A;Receteline number: A70300; MUDI:5023307; FILD:5034230 A;Accession: (70573) A;Status: preliminary; nucleic acid sequence not shown; translation not shown A;Molecule type: DNA A;Molecule type: DNA A;Residues: 1-120 <col/> A;Cross-references: UNIPROT:006184; UNIPARC:UPI00000D1142; GB:Z95387; GB:AL123456; NID:9 A;Experimental source: strain H37Rv C:Genetics: | C;Accession: C70573 R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, S.; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, S. Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, S37-544, 1998 Nature 393, S37-544, 1998 A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G. A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete genome A.Beference mymber. 470500. MITH. 08295987. pmTD.0674230 | RESULT 1<br>C70573<br>hypothetical protein Rv2628 - Mycobacterium tuberculosis (strain H37RV)<br>C;Becies: Mycobacterium tuberculosis |
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R.Goodner, B.; Hinkle, G.; Gattung, S.; Miller, N.; Blanchard, M.; Qurollo, B.; Goldman, A.; Liu, F.; Wollam, C.; Allinger, M.; Doughty, D.; Scott, C.; Lappas, C.; Markelz, B.; Science 294, 2323-238, 2001
A;Title: Genome Sequence of the Plant Pathogen and Biotechnology Agent Agrobacterium tum A;Reference number: A97359; MUID:21608551; PMID:11743194
A;Accession: G98145
                                                                                                                                                                                                                                                   probable aminotransferase y4uB [imported] - Agrobacterium tumefaciens (strain C;Species: Agrobacterium tumefaciens C;Date: 22-Oct-2001 #sequence_revision 22-Oct-2001 #text_change 31-Dec-2004 C;Accession: G98145
A; Map
                                                      A;Molecule type: DNA
A;Residues: 1-520 <KUR>
A;Cross-references: UNI
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A;Cross-references: UNIPROT:(95K0B2; UNIPARC:UPI00000C4543; GB:AE002425; GB:AE002098; NII
A;Experimental source: serogroup B, strain MC58
C;Genetics:
C;Genetics:
A;Gene: NMB0702
C;Superfamily: competence protein ComBC
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C;Superfamily:
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A; Residues: 1-691 < PAR>
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                                                          UNIPROT: Q8U6P6;
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27.1%;
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                                                          UNIPARC: UPI00000D26BF;
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A;Cross-references: UNIPROT:P51973; UNIPARC:UPI0000127E83; R;Fussenegger, M.; Facius, D.; Meier, J.; Meyer, T.F. Mol. Microbiol. 19, 1095-1105, 1996 Mol. Microbiol. 19, 1095-1105, 1996 A;Title: A novel peptidoglycan-linked lipoprotein (ComL) th A;Reference number: S71019; MUID:96249702; PMID:8830266 A;Accession: S71019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C;Date: 19-Mar-1997 #Sequence_revision 19-Mar-1997 #text_change 09-Jul-20 C;Accession: S39867; S71019 R;Facilus, D.; Meyer, T.F.
Mol. Microbiol. 10, 699-712, 1993
A;Title: A novel determinant (comA) essential for natural transformation A;Reference number: S39867; MUID:95020543; PMID:7934834
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F;220-240/Domain:
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A; Cross-references: UNIPARC: UPI00001796F5;
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A; Residues: 1-691 <FAC>
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nes 28; Conserva
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                                     VTDRSHDG-RTARVPGDEITSTVS-GWLSELGTQSPLADELARAVRI
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                                                                            PTORSVLMLAAFAWAWRRGRLSAWATWWQALAAVLLFDPLAVLGVGTWLSFGLVAALIWA 300
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<TM3>
<TM4>
<TM5>
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                                                                                                                                                            13;
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ä

R;Nierman, W.C.; Feldblyum, T.V.; Paulsen, I.T.; Nelson, K.E.; Eisen, J.; Heidelberg, J. B.; Laub, M.T.; DeBoy, R.T.; Dodson, R.J.; Durkin, A.S.; Gwinn, M.L.; Haft, D.H.; Kolon n, J.; Ermolaeva, M.; White, O.; Salzberg, S.L.; Shapiro, L.; Venter, J.C.; Fraser, C.M. Proc. Natl. Acad. Sci. U.S.A. 98, 4136-4141, 2001
A;Title: Complete Genome Sequence of Caulobacter crescentus.
A;Reference number: A87249; MUID:21173698; PMID:11259647

peptidase, M23/M37 family [imported] - Caulobacter crescentus C;Species: Caulobacter crescentus C;Date: 20-Apr-2001 #sequence\_revision 20-Apr-2001 #text\_change 09-Jul-2004 C;Accession: G87496

G87496

RESULT

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A; McBeddues: 1-139'X', 141-715 <BLATS
A; Cross-references: UNIPARC: UPI000011043F; GB:AE000481; GB:U00096; NID:g2367346; PIDN:AA
A; Cross-references: UNIPARC: UPI000011043F; GB:AE000481; GB:U00096; NID:g2367346; PIDN:AA
A; Experimental source: strain K-12, substrain MG1655
A; Note: the authors translated the selenocysteine UGA codon for residue 140 as 'X'; we h
A; Axley, M.J.; Grahhame, D.A.; Stadtman, T.C.
J. Biol. Chem. 265, 18213-18218, 1990
J. Biol. Chem. 265, 18213-18218, 1990
A; Title: Escherichia coli formate-hydrogen lyase. Purification and properties of the sel
A; Reference number: A36088; MUID:91009309; PMID:2211698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Science 277, 1453-1462, 1997
A;Title: The complete genome sequence of Escherichia coli
A;Reference number: A64720; MUID:97426617; PMID:9278503
A;Accession: F65216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Date: 31-Mar-1988 #sequence revision 31-Dec-1992 #text_change 05-Oct-2004 C;Accession: A24145; P65216; A36088 R;Zinoni, F.; Birkmann, A.; Stadtman, T.C.; Boeck, A. Proc. Natl. Acad. Sci. U.S.A. 83, 4650-4654, 1986 A;Title: Nucleotide sequence and expression of the selenocysteine-containing A;Reference number: A24145; MUID:86259655; PMID:2941757 A;Accession: A24145
                                                                                                                                                                                                                                                                                                         A;Molecule type: protein
A;Residues: 1-7,'X',9-10,'X',12 <AXL>
A;Residues: 1-7,'X',9-10,'X',12 <AXL>
A;Residues: 1-7,'X',9-10,'X',12 <AXL>
A;Cross-references: UNIPARC: UDIO11FB3
R;Gladyshev, V.N.; Khangulov, S.V.; Axley, M.J.; Stadtman, T.C.
Proc. Natl. Acad. Sci. U.S.A. 91, 7708-7711, 1994
A;Title: Coordination of selenium to molybdenum in formate dehydrogenase
A;Reference number: A58332; MUID:94329585; PMID:8052647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                  A;Contents: annotation; X-ray crystallography, R;Sun, P.D.; Boyington, J.C. submitted to the Brookhaven Protein Data Bank, A;Reference number: A67589; PDB:1FDI
                                                                                                                                                                                               R;Sun, P.D.; Boyington, J.C. submitted to the Brookhaven Protein Data Bank, A;Reference number: A67458; PDB:1AA6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Note: the authors translated the selenocysteine UGA codon for residue R;Blattner, F.R.; Plunkett III, G.; Bloch, C.A.; Perna, N.T.; Burland, V.A.; Rose, D.J.; Mau, B.; Shao, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
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A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-609 <STO>
                             A;Contents: annotation; X-ray crystallography, R;Sun, P.D.; Boyington, J.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Accession: A36088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Experimental source: strain MC4100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              formate dehydrogenase (EC 1.2.1.2) H (hydrogenase-linked) [validated] - Escherichia N_iAlternate names: formate dehydrogenase H (benzylviologen-linked) (FDH-H); formate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Status: nucleic acid sequence not shown; translation not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;Molecule type: DNA
;Residues: 1-139,'X',141-715 <ZIN>
;Cross-references: UNIPROT:P07658; UNIPARC:UPI000011043F;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;Species: Escherichia coli
                                                                                                                                                                                                                                                                                  Contents: annotation; selenium coordination of cofactor by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Genetics:
Gene: CC1996
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         818
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Boyington, J.C.
the Brookhaven Protein Data
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                                                                                                                                                                                                                                January
     January 1997
                                                                                                                  January
                                                                                                                                                                        2.3 angstroms,
                                                     2.9 angstroms,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2
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                                                          oxidized
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뮹 ঠ 밁 S

634 KIITRAQVSDRPNKG--

QSATIYOVTDRSHDGRTARVPGDEITSTVSGWL---SELGTQ--SPLADE-----LARA 96

-AIYMTYQWWIGACNELVTENLSPITKTPEYKYCAVRV

989

STVREVGHYSCRSMTGNCAALAALADEPGYAQINTADAARLGIEDEAL----VWVHSRKG

---GRWGVHQEAMMNLAIW-HPRKV

633 47

97

VRIGDWPAA--YAIGEH

Matches

Local

Similarity

Conservative

14;

Mismatches

40;

Indels

46;

Gaps

SGIRAVGPY---AWAGRCGRI-----

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Nature 413, 848-852, 2001
Nature 413, 848-852, 2001
A;Authors: Parry, C.; Quail, M.; Rutherford, K.; Simmonds, M.;
A;Title: Complete genome sequence of a multiple drug resistant
A;Title: A;Title: Complete genome sequence of a multiple drug resistant
                                                                                                                                                                                                                                                                                                                                                                                                       formate dehydrogenase (EC 1.2.1.2) - Salmonella enterica subsp. C;Species; Salmonella enterica subsp. enterica serovar Typhi A;Note: this species has also been called Salmonella typhi C;Date: 09-Nov-2001 #sequence_revision 09-Nov-2001 #text_change C;Accession: AE1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Description: catalyzes the reversible oxidation of formate to carbon dioxide with C;Keywords: 4Fe-4S; iron-sulfur protein; metalloprotein; molybdopnerin; molybdopnerin; F;B, 11,15,42/Binding site: 4Fe-4S cluster (Cys) (covalent) #status experimental F;B, 11,15,42/Binding site: 4Fe-4S; sites (Cys) (covalent) #status experimental F;44,141/Active site: Tys, His #status predicted
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Title: Crystal structure of formate dehydrogenase H: catalysis involving Mo, molybdopt A;Reference number: A58962; MUID:97190104; PMID:9036855 A;Contents: annotation; X-ray crystallography
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Reference number: A67590; PDB:1FDO
A;Contents: annotation; X-ray crystallography, 2.8 angstroms, oxidized form, R;Boyington, J.C.; Gladyshev, V.N.; Khangulov, S.V.; Stadtman, T.C.; Sun, P. Science 275, 1305-1308, 1997
                                                                                                               A;Cross-references:
C;Genetics:
                                                                                                                                                         A; Molecule type: DNA
A; Residues: 1-715 < PAR>
                                                                                                                                                                                                                         A; Reference number: AB0502; A; Accession: AE1021
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                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
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                                                                                          STY4484
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               686 EPIADQRAAEQYVIDEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        578 STVREVGHYSCRSMTGNCAALAALADEPGYAQINTEDAKRLGIEDEAL----VWVHSRKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 48
                                                                   oxidoreductase
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9 SGIRAVGPY---AWAGRCGRIG-------RWGVHQEAMMNLAIW-HPRKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QSATIYQVTDRSHDGRTARVPGDEITSTVSGWL---SELGTQ--SPLADE-----LARA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VRIGDWPAA--YAIGEH
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                                                                                                                                                                                                                                                                                                                                                         P.; Cronin,
                                                                                                                                    UNIPROT:Q8Z1Q0; UNIPARC:UPI0000174F68; GB:AL513382; PIDN:CAD09270.1;
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                                                                                                                                                                                                                                                                                                                                                              G.; James, K.D.; Cronin, A.; Davis,
11.5%;
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27.0%;
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  Score
Pred.
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Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -AIYMTYQWWIGACNELVTENLSPITKTPEYKYCAVRV
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    No.;
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, P.; Davies, R.
    DB
21;
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                       2:
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e, N.; Farrar
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RESULT 11
A53669
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C;Species: Rattus norvegicus (Norway rat)
C;Date: 13-Jan-1996 #sequence_revision 01-Mar-1996 #text_change 09-Jul-2004
C;Accession: S57953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 10
S57953
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A;Title: Cloning of a novel human testis mRNA specifically
A;Reference number: JC5958; MUID:98153804; PMID:9480848
A;Accession: JC5958
streptogrisin
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-558 cHIL>
A;Residues: 1-558 cHIL>
A;Residues: 1-558 cHIL>
A;Cross-references: UNIPROT:Q63514; UNIPARC:UPI0000126C29;
A;Cross-references: UNIPROT:Q63514; UNIPARC:UPI0000126C29;
C;Superfamily: C4b-binding protein alpha chain; complement
F;15-72/Domain: complement factor H repeat homology cFH1>
F;177-134/Domain: complement factor H repeat homology cFH2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Hillarp, A.; Thern, A.; Dahlback, B.
submitted to the EMBL Data Library, July 1995
A;Description: Molecular Cloning of rat C4b-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Accession: JC5958
R;Shankar, S.; Mohapatra, B.; Suri, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Species: Homo sapiens (man)
C;Date: 16-Jul-1999 #sequence_revision 16-Jul-1999 #text_change 09-Jul-2004
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A; Residues: 1-766 < SHA>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: UNIPROT:060905; UNIPARC:UPI000017C354; EMBL:X91879
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Best Local S
Matches 18
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Best Local Similarity
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                                                                                                                                                   TVSGWLSELGTOSPLADELARAVRIGD 101
                                                                                                                                                                                          CKSDGTWHPRTPSCHQSCDFPPAIAHGRYTKSSSYYVRTQVTYECEEG--YRLVGE---A
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                                                                                                          TISCWYSQWTPAAPQCKALCRKPEIGN
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Pred. No. 23;
15; Mismatches
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    Streptomyces
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carboxypeptidase (EC 3.4.-.-) Tag - Thermus aquaticus (strain YT-1) C;Species: Thermus aquaticus C;Species: Thermus aquaticus C;Date: 28-Oct-1994 #sequence_revision 28-Oct-1994 #text_change 05-Oct-2004 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Accession: JC2202 C;Accession: JC2294; PC2202 C;Accession: JC2294; PC2202 C;Ac
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A;Residues: 1-511 <LEE2>
A;Cross-references: UNIPARC:UPI00001285FD
C;Comment: This enzyme hydrolyzes the peptide bond at the
C;Comment: This enzyme is a metallo-carboxypeptidase with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Biosci. Biotechnol. Biochem. 58, 1490-1495, 1994
A;Title: Carboxypeptidase Taq, a thermostable zinc enzyme,
A;Reference number: JC2294; MUID:94369103; PMID:7765282
A;Accession: JC2294
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C;Date: 07-Oct-1994 #sequence_revision 07-Oct-1994 #text_change 05-Oct-2004
C;Accession: A53669
R;Sidhu, S.S.; Kalmar, G.B.; Willis, L.G.; Borgford, T.J.
J. Biol. Chem. 269, 20167-20171, 1994
A;Ritle: Streptomyces griseus protease C. A novel enzyme of the chymotrypsin superfamily A;Reference number: A53669; MUID:94327573; PMID:8051104
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A;Residues: 1-511 <LEE1>
A;Cross-references: UNIPROT:P42663; UNIPARC:UPI00001285FD; DDBJ:D17669; NID:g497631; PID:
A;Accession: PC2202
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C;Keywords: hydrolase; serine proteinase
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A;Residues: 1-457 <SID>
A;Cross-references: UNIPROT:P52320; UNIPARC:UPI000000139F; GB:L29018; NID:g532654; PIDN:.
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Best Local S
Matches 26
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Best Local Similarity
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63
                                                                    71
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                                                                    EITSTVSGWLSELGTQSPLADELA-RAVRIGDWPAAY----AIGEHLSVEIAVA
                                                                                                                                                                                                                              AWAGRCGRIGRWGVHQEAMMNLAIWHPRKVQSATIYQVT-----DRSHDGRTARVPGD
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                                                                                                                                                     AYLGSLGALAAW--DQRTMI-----PRKGHGHRARQMAALARLLHERATDPR-----
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- igewlekvegsslvedplsdaavnvrawrrayeraraiperlavelaqa
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                                                                                                                                                                                                                                                                                                      11.3%; Score 72; DB 27.2%; Pred. No. 18; :ive 14; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Yoshimura, E.; Minagawa, E.; Kaminogawa, S.; Ohta,
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Pred. No.
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16;
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                                                                                                                                                                                                                                                                                                              32;
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probable monoxygenase cytochrome P450 Rv0568 N;Contains: oxidoreductase (EC 1.-.-.)
C;Species: Mycobacterium tuberculosis

Mycobacterium tuberculosis (strain

H37RV)

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C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 09-Ju1-ZUV4 C;Accession: G70932 R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Go:; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holr. Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, 537-544, 1998
A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G. A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete A;Reference number: A70500; MUID:98295987; PMID:9834230
A;Accession: G70932
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AF0666
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A;Authors: Parry, C.; Quail, M.; Rutherford, K.; Simmonds, M.;
A;Title: Complete genome sequence of a multiple drug resistant
A;Reference number: ABOSO2; MUID:21534947; PMID:11677608
A;Accession: AF0666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     probable exported protein STY1442 [imported] - Salmonëlla enterica subsp. enterica serov C;Species: Salmonella enterica subsp. enterica serovar Typhi A;Note: this species has also been called Salmonella typhi C;Date: 09-Nov-2001 #sequence_revision 09-Nov-2001 #text_change 18-Nov-2002 C;Accession: AF0666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Superfamily: Bacillus cytochrome P450 CYP106; cytochrome P450 homo: C;Keywords: chromoprotein; heme; iron; metalloprotein; oxidoreductase F;258-410/Domain: cytochrome P450 homology <P45> F;388/Binding site: heme iron (Cys) (axial ligand) #status predicted
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                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: DNA
A; Residues: 1-541 < PAR>
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th, T.; Connerton, P.; Cronin, A.; Davis, P.; Davies, R.M.; Dowd, L.; White,
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A;Residues: 1-472 <COL>
A;Cross-references: UNIPROT:O53765; UNIPARC:UPI0000126BB9;
A;Experimental source: strain H37Rv
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A; Gene: Rv0568
                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Status: preliminary
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Best Local S
Matches 37
                                                                                                                                                                                                                                                                                                                                                                      Cross-references: UNIPARC:UPI0000059EE8; GB:AL513382; PIDN:CAD01703.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S.; Moule, S.; O'Gaora, P.
                                                                                                                                                                                                                                                                                                                     Gene: STY1442
                                                                                                                                                                                               Matches
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401
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RLYWSAQPPVQSPLARVMATRTGMGGFPEGWAPGEH
                                           S-GWLSELGTOSPLADELARAVRIGEWPAAYAIGEW 111
                                                                                            KWGKGAVSLMEIPTTGETLDNVVCFWQPEKAIKA-----
                                                                                                                                              RWGVHQEAMMNL-----AIWHPRKVQSATIYQVTDRSHDGRTARVPGDEITSTV
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                                                                                                                                                                                                                                                                                              periplasmic
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                                                                                                                                                                                                                      11.1%; Score 71; DB 2; Length 541; 22.9%; Pred. No. 24;
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21.0%; Pred. No. 21;
tive 23; Mismatches
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RESULT 15
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Reference number: S74322; MUID:97061201; PMID:8905231
A;Accession: S75260
A;Status: nucleic acid sequence not shown; translation
A;Molecule type: DNA
A;Residues: 1-704 <KAN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hypothetical protein sl10985 - Synechocystis sp. (strain PCC 6803)
C;Species: Synechocystis sp.
A;Variety: PCC 6803
A;Variety: PCC 6807
C;Date: 25-Apr-1997 #sequence_revision 25-Apr-1997 #text_change 09-Jul-2004
C;Date: 25-Apr-1997 #sequence_revision 25-Apr-1997 #text_change 09-Jul-2004
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Matches
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FESQEIAIG
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29.0%;
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  2166443 seqs, 705528306 residues
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2: uniprot_trembl:*
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Q4KE05 PSEF5
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Q5GZW7 XANOR
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Q7CVT0_AGRT5
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# ALIGNMENTS

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D 006184; MYCTU PRELIMINARY;
AC 006184; Q7D6V2;
DT 01-JUL-1997 (TrembLrel. 04, C;
DT 01-JUL-1997 (TrembLrel. 04, L;
DT 13-SEP-2005 (TrembLrel. 31, L;
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Matches 120;
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STRAIN=CDC 1551 / Oshkosh;
MEDLINE=22206494; PubMed=12218036;
MEDLINE=22206494; PubMed=12218036;
DOI=10.1128/JB.184.19.5479-5490.2002;
Pleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O.,
Peterson J.D., DeBoy R.T., Dodson R.J., Gwinn M.L., Haft D.H.,
Hickey E.K., Kolonay J.F., Nelson W.C., Umayam L.A., Ermolaeva M.D.,
Salzberg S.L., Delcher A., Utterback T.R., Weidman J.F., Khouri H.M.,
Gill J., Mikula A., Bishai W., Jacobs W.R. Jr., Venter J.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDIINE-9829987; PubMed-9634230; DOI=10.1038/31159; Cole S.T., Brosch R., Parkhill J., Garnier T., Churcher C.M., Harris D.E., Gordon S.V., Eiglmeier K., Gas S., Barry C.E. III, Tekaia F., Badcock K., Basham D., Brown D., Chillingworth T., Connor R., Davies R.M., Devlin K., Feltwell T., Gentles S., Hamlin N., Holroyd S., Hornsby T., Jagels K., Kroph A., McLean J., Moule S., Murphy L.D., Oliver S., Osborne J., Quail M.A., Rajandream M.A., Rogers J., Rutter S., Seeger K., Skelton S., Squares S., Squares R., Sulston J.E., Taylor K., Whitehead S., Barrell B.G.; "Deciphering the biology of Mycobacterium tuberculosis from the complete genome sequence.";
                                                                       TubercuList; Rv2628;
Complete proteome; Hy
SEQUENCE 120 AA; 1
                                                                                                                                                              J. Bacteriol. 184:5479-5490 (2002).
EMBL; BX842580; CAB08635.1; -; Gen
EMBL; AE000516; AAK47019.1; -; Gen
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OrderedLocusNames=MT2703, Rv2628;
                                                                                                                            PIR; C70573; C70
TIGR; MT2703;
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Hypothetical protein.
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                    Score 637; DB 2;
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Q7TY70 MYCBO 1
Q7TY70;
Q1-OCT-2003 (7
Li L., Bannantine J., Zhang Q., Amonsin A., Alt D., Kapi
Submitted (SEP-2003) to the EMBL/GenBank/DDBJ databases
EMBL; AE017237; AAS05045.1; -; Genomic_DNA.
Complete proteome; Hypothetical protein.
SEQUENCE 87 AA; 9576 MW; 6B4CD5A0ED21034A CRC64;
                                                                                                                                                                                                                                                                                                                                                     05-JUL-2004 (TrEMBLrel.
05-JUL-2004 (TrEMBLrel.
05-JUL-2004 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=22709107; PubMed=12788972; DOI=10.1073/pnas.1130426100; Garnier T., Eiglmeier K., Camus J.-C., Medina N., Mansoor H., Pryor M., Duthoy S., Grondin S., Lacrix C., Monsempe C., Simon S. Harris B., Atkin R., Doggett J., Mayes R., Keating L., Wheeler P.F. Parkhill J., Barrell B.G., Cole S.T., Gordon S.V., Hewinson R.G.; "The complete genome sequence of Mycobacterium bovis."; Proc. Natl. Acad. Sci. U.S.A. 100:7877-7882(2003).
                                                                                                                     STRAIN=k10
                                                                                                                                                                                    NCBI_TaxID=1770;
                                                                                                                                                                                                                                     Mycobacterium paratuberculosis.
Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium;
                                                                                                                                                                                                                                                                                                       Hypothetical protein.
OrderedLocusNames=MAP2728;
                                                                                                                                                                                                                                                                                                                                                                                                                                               >2 MYCPA
Q73WD2_MYCPA PRELIMINARY;
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                                                                                                                                           NUCLEOTIDE SEQUENCE.
                                                                                                                                                                                                                 Mycobacterium
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RESULT 4

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Q5LLJ1 SILPO
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DT 01-FEB-2005 (TrEMBLrel 29,
DT 01-FEB-2005 (TrEMBLrel 29,
DT 01-FEB-2005 (TrEMBLrel 29,
DE NADH: ubiquinone oxidoreduct
DE (EC 1.6.5.-).

GN Name-ngrA; OrderedLocusName
OS Silicibacter pomeroyi.
OG plasmid megaplasmid.
OC PRODUCTOR SEQUENCE (LARGE
RP NUCLEOTIDE SEQUENCE (LARGE
RP NUCLEOTIDE SEQUENCE (LARGE
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GORA
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RA Brinkac L.M., Lewis M., Joh
RA Paulsen I.T., Ren Q., Daugh
RA Durkin A.S., Madupu R., Nell
RA Paulsen I.T., Ren Q., Daugh
RA Durkin A.S., Madupu R., Nell
RA Paulsen I.T., Ren Q., Daugh
RA Durkin A.S., Madupu R., Nell
RA Paulsen I.T., Ren Q., Daugh
RA Durkin A.S., Madupu R., Nell
RA Brinkac L.M., Lewis M., Joh
RA Brinkac L.M., Lewis M., Joh
RA Brinkac L.M., Lewis M., Joh
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RA Brinkac L.M., Lewis M., Joh
RA Brinkac L.M., Lewis M., Joh
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Q9K0B2 NEIMB

ID Q9K0B2, NEIMB F

AC Q9K0B2,

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DT 01-JUN-2003 (1)
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Best Local S
Matches 53
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STRAINADSS-3 / ATCC 700808 / DSM 15171;

PubMedel15602564; D0I=10.1038/nature03170;

Moran M.A., Buchan A., Gonzalez J.M., Heidelberg J.F., Whitman W.B.

Kiene R.P., Henriksen J.R., King G.M., Belas R., Fuqua C.,

Brinkac L.M., Lewis M., Johri S., Weaver B., Pai G., Eisen J.A.,

Rahe E., Sheldon W.M., Ye W., Miller T.R., Carlton J., Rasko D.A.,

Paulsen I.T., Ren Q., Daugherty S.C., DeBoy R.T., Dodson R.J.,

Durkin A.S., Madupu R., Nelson W.C., Sullivan S.A., Rosovitz M.J.,

Haft D.H., Selengut J., Ward N.;

"Genome sequence of Silicibacter pomeroyi reveals adaptations to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; CP000032; AAV97168.1; -; Genomic DNA.
GO; GO:0016491; F:oxidoreductase activity;
GO; GO:0016555; F:oxidoreductase activity,
GO; GO:0006814; F:sodium ion transport; IEA
InterPro; IPR008703; NQRA.
Pfam; PF05896; NQRA; 1.
TIGREAMS; TIGR01336; ngrA; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Plasmid megaplasmid.
Bacteria; Proteobacteria; Alphaproteobacteria;
Rhodobacteraceae; Silicibacter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Name=ngrA; OrderedLocusNames=SPOA0028; Silicibacter pomeroyi.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                               RWGVHQEAMMNLAIWHPRKVQSATIYQVTDRSHDGRTARVPGDEITSTVSGWLSELGTQS
                                                                                                                                                                                                                                   SNLNGGRRAMVP----
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  (TrEMBLrel. 15, (TrEMBLrel. 15, (TrEMBLrel. 24,
                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
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                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Oxidoreductase; Plasmid; Ubio 47132 MW; BD7AD132AAB25EF6
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L5; Mismatches
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Pred. No. 4.7e-18;
2; Mismatches 17
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  sequence update) annotation update)
                                                                                                      691
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Neisseria meningitidis (serogroup B).
Bacteria; Proteobacteria; Betaproteobacteria; Neisseriales;
Neisseriaceae; Neisseria.
NCBI\_TaxID=491;

protein Coma.
OrderedLocusNames=NMB0702;
OrderedLocusNames=NMB0702;

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Pfam; PF00753; Lactamase B; 1.
TIGRPAMs; TIGR00360; ComEC_N-term;
TIGRPAMs, TIGR00361; ComEC_Rec2; 1.
Complete proteome.
SEQUENCE 691 AA; 74408 MW; 5ECO
                     STRAIN=Z2491 / Serogroup A / Serotype 4A;
MEDLINE=20222556; PubMed=10761919; DOI=10.1038/35006655;
Parkhill J., Achtman M., James K.D., Bentley S.D., Churche:
Klee S.R., Morelli G., Basham D., Brown D., Chillingworth '
Davies R.M., Davis P., Devlin K., Feltwell T., Hamlin N., I
Jagels K., Leather S., Moule S., Mungall K.L., Quail M.A.,
Rajandream M.A., Rutherford K.M., Simmonds M., Skelton J.,
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                                                                                                                                                                                                                                                                                         Competence protein.
Name=comA; OrderedLocusNames=NMA0906;
Neisseria meningitidis (serogroup A).
Bacteria; Proteobacteria; Betaproteobacteria; Neisseriales;
Neisseriaceae; Neisseria.
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01-OCT-2000 (TrEMBLrel.
01-JUN-2003 (TrEMBLrel.
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09JVB8 NEIMA PRELIMINARY;
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MEDLINE=20175755; PubMed=10710307;
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InterPro; IPR004477; COMEC_N-term.
InterPro; IPR004477; COMEC_Rec2.
Pfam; PF03772; Competence; 1.
Pfam; PF03772; Competence B; 1.
TIGRPAMs; TIGR00360; COMEC_N-term; 1.
TIGRPAMs; TIGR00361; COMEC_Rec2; 1.
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SEQUENCE
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-!- SUBCELULAR LOCATION: Cycoplasmic (By similarity).
EMBL; AP006618; BAD58973.1; -; Genomic DNA.
GO; GO:0016491; F: exidoreductase activity; IEA.
GO; GO:0008270; F: zinc ion binding; IEA.
InterPro; IPR002085; ADH Sf_Zn.
Pfam; PF00107; ADH_zinc_N; I.
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Nature 404:502-506(2000).

EMBL; AL162754; CAB84183.1; -; Genomic_DNA.

EMBL; B81937; B81937.

GO; GO:0016021; C:integral to membrane; IEA.

GO; GO:0030420; P:establishment of competenc

GO; GO:0006810; P:transport; IEA.
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PubMed=15466710; DOI=10.1073/pnas.0406410101;
PubMed=15466710; DOI=10.1073/pnas.0406410101;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hattori M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                             331 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  691 AA;
                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nocardiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                33227 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     74435 MW;
                                                                                                                                                                                                                                                                                        13.0%;
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26.2%;
                                                          PGDEITST-VSGWLSELGTQ---SPLADELARAVRIGDWPAAYAI
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Last
                                                                                                                                                                                                                                                         Score 82.5; D
Pred. No. 9;
13; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
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Pred. No. 16
                                                                                                                                                                                                                                                                                                                                                                                             8FE58428946EB29C
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RESULT 9
Q7WKL
D7WKL
AC Q7WK
AC Q7WK
D7 01-C
D7 01-C
D7 01-C
D7 01-C
D8 Puts
GN OYds
CN Bac
OC Bac
OC Alc
OC Alc
OX NCB
RN (1)
RP NUC
RX STH
RX MAI
RA Pai
RA Pai
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RX MEDLINE-22827954; PubMed=12910271; DOI=10.1038/ng1227;

RA Parkhill J. Sebaihia M., Pereston A., Murphy L.D., Thomson N.R.,

RA Parkhill J. Sebaihia M., Pereston A., Murphy L.D., Thomson N.R.,

RA Harris D.E., Holden M.T.G., Churcher C.M., Bentley S.D., Mungall K.L.,

RA Achtman M., Atkin R., Baker S., Basham D., Bason N., Cherevach I.,

RA Achtman M., Atkin R., Baker S., Basham D., Bason N., Cherevach I.,

RA Chillingworth T., Collins M., Cronin A., Davis P., Doggett J.,

RA Feltwell T., Goble A., Hamlin N., Hauser H., Holroyd S., Jagels K.,

RA Feltwell T., Goble A., Hamlin N., Hauser H., Holroyd S., Jagels K.,

RA Leather S., Moule S., Norberczak H., O'Neil S., Ormond D., Price C.,

RA Rabbinowitsch E., Rutter S., Sanders M., Saunders D., Seeger K.,

RA Rabbinowitsch E., Rutter S., Sanders M., Saunders D., Seeger K.,

RA Sharp S., Simmonds M., Skelton J., Squares R., Squares S., Stevens K.,

RA Unwin L., Whitehead S., Barrell B.G., Maskell D.J.;

"Comparative analysis of the genome sequences of Bordetella pertussis,

RT Mcartis B. Ske40418; CAB42801 1; -; Genomic_DNA.

DR HEBL; BS640418; CAB42801 1; -; Genomic_DNA.

RY InterPro; IPRO10728; CpaB.

Promission Capaba 1.
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Best Local S
Matches 30
NUCLEOTIDE SEQUENCE.
STRAINARB50 / ATCC BAA-588;
MEDLINE=22827954, PubMed=12910271; DOI=10.1038/ng1227;
Parkhill J., Sebaihia M., Preston A., Murphy L.D., Thomson Harris D.E., Holden M.T.G., Churcher C.M., Bentley S.D., Mu
                                                                                                                                                                                                                                                                                                                                                                                                      QTWKLO BORBR PRELIMINARY;
Q7WKLO;
01-OCT-2003 (TrEMBLrel. 25
01-OCT-2003 (TrEMBLrel. 25
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                                                                                                                                                                                     Alcaligenaceae;
NCBI_TaxID=518;
                                                                                                                                                                                                                                                   Bordetella bronchiseptica (Alcaligenes bronchisepticus).
Bacteria; Proteobacteria; Betaproteobacteria; Burkholderiales;
                                                                                                                                                                                                                                                                                                              Putative exported protein. OrderedLocusNames=BB2096;
                                                                                                                                                                                                                                                                                                                                                                       01-OCT-2003 (TrEMBLrel.
01-MAR-2004 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bordetella pertussis.
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Q7VVV9_BORPE PRELIMINARY;
Q7VVV9;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 281 AA;
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                                                                                                                                                                                                                          Bordetella.
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Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
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SEQUENCE
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NMEL, BX640443; CAB32592.1; -; Genomic_DNA.
                                                                                                                                                                                                                                                                                                                                                                                                       Proc. Natl. Acad. Sci. U.S.A. 99:984-989(2002).
EMBL; AE009922; AAL64817.1; -; Genomic_DNA.
GO; GO:0008299; P:isoprenoid biosynthesis; IEA.
InterPro; IPR000092; Polyprenyl_synt.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN=IM2 / ATCC 51768 / DSM 7523;
MEDLINE=21664397; PubMed=11792869; DOI=10.1073/pnas.241636498;
Fitz-Gibbon S.T., Ladner H., Kim U.-J., Stetter K.O., Simon M.
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01-MAR-2002 (TrEMBLrel. 20,
01-OCT-2003 (TrEMBLrel. 25,
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PROSITE; PS00723; POLYPRENYL_SYNTHET_1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Genome sequence of the hyperthermophilic crenarchaeon Pyrobaculum aerophilum.";
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STRAIN=IM2 / ATCC 51
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Archaea; Crenarchaeota; Thermoprotei;
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Qeztes;
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263 AA;
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----IAESIRRAVKLGPEVVEYLADVAQRLS 144
                                                TOSPLADELARAVRIGDWPAAYA--IGEHLS 113
                                                                                                 ALMDPRIIQAATIIELLHVVSLLQDDVMDKHEERRGIKTPRVLYGDDRTILASDWL---- 117
                                                                                                                                                    AIWHPRKVQSATIYQ-----
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Pred. No. 10;
11; Mismatches
                                                                                                                                                                                                       Score 80.5; DI Pred. No. 11; L5; Mismatches
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01-OCT-1996
10-MAY-2005
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                                                     NUCLEOTIDE SEQUENCE.

MEDLINE=95020543; PubMed=7934834;

Facius D., Meyer T.F.;

FA novel determinant (comA) essential for natural transformation

"A novel determinant (comA) defe
                                                                                                                                        Neisseria gonorrhoeae.
Bacteria; Proteobacteria;
Neisseriaceae; Neisseria.
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Agrobacterium tumefacTens (Etrain C58 / ATCC 33970).
Bacteria; Proteobacteria; Alphaproteobacteria; Rhizo
Rhizobiaceae; Rhizobium/Agrobacterium group; Agrobac
NUCLEOTIDE SEQUENCE
                                     pilin variation
                                                 competence in Neisseria
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Science 294:2323-2328(2001)
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PROSITE; PS00600; AA_TRANSFER_CLASS_3; 1.
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PANTHER; PTHR11986; Aminotrans 3; 1.
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GO:0030170; F:pyridoxal phosphate binding
GO:0008483; F:transaminase activity; IEA
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520 AA;
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group; Agrobacterium.
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OSKVX7_GEOKA PRELIMINARY;
OSKVX7;
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O1-FEB-2005 (TremBLrel. 29, L
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SEQUENCE 6
PubMed=15576355; DOI=10.1093/nar/gkh970; Takami H., Takaki Y., Chee G.-J., Nishi i Matsui S., Uchiyama I.; "Thermoadaptation trait revealed by the intermophilic Geobacillus kaustophilus."; Nucleic Acids Res. 32:6292-6303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TIGRFAMS;
TIGRFAMS;
                                                                         NUCLEOTIDE SEQUENCE.
STRAIN=HTA426;
                                                                                                                          Hypothetical conserved protein. OrderedLocusNames=GK2874; Geobacillus kaustophilus.
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Pfam;
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Fussenegger M., Facius D., Meier J., Meyer T.F.;
"A novel peptidoglycan-linked lipoprotein (Comb) that functions
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-I- FUNCTION: Essential for natural transformation.
                                                                                                      NCBI_TaxID=1462;
                                                                                                                  Bacteria; Firmicutes;
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IPR004797; ComEC_Rec2.
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Swiss Institute of Bioinformatics and
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BA000043; BAD77159.1; -; Genomic\_

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R GO; GO:000477; F:hydrolase activity; IEA.
R GO; GO:00067025; P:arcmatic compound metabolism; IEA.
R GO; GO:0006508; P:proteolysis and peptidolysis; IEA.
R InterPro; IPR000073; A/b hydrolase.
R InterPro; IPR000073; A/b hydrolase.
R InterPro; IPR000262; Lipase AS.
R InterPro; IPR000262; Lipase AS.
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R InterPro; IPR000279; Ser_estrs.
R InterPro; IPR000379; Ser_estrs.
R PINTS; PR0011; ABHYDROLASE.
R PRINTS; PR0011; ABHYDROLASE.
R PRINTS; PR0011; ABHYDROLASE.
R PRINTS; PR00120; LIPASE_SER; UNKNOWN 1.
R PROSITE; PS001020; LIPASE_SER; UNKNOWN 1.
SEQUENCE 270 AA; 30278 MW; 9475BD273C480910 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PubMed=15018097; DOI=10.1007/800284-003-3997-5; Wang W.W., Gao J., hiao J., Zhao G., Jiang W.; Wang-Component System amms-makb Involved in the Regulation Central Carbohydrate Metabolism in Rifamycin SV-Producing Amycolatopsis mediterranei U32.";
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01-DEC-2001 (TrEMBLrel. 25, Last sequence update)
01-DEC-2001 (TrEMBLrel. 25, Last annotation update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Hypothetical protein (Fragment).
Amycolatopsis mediterranei (Nocardia mediterranei).
Bacteria, Actinobacteria, Actinobacteridae; Actinomycetales;
Pseudonocardineae; Pseudonocardiaceae; Amycolatopsis.
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EMBL; AJ318385; CAC42482.1; -; Genomic_DNA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HAAADLAALLDEWGVEQVNVLGYSMGGRLALAFAVWHPRRVRRLVLESSSPGLETEEERR
                                                                                                                                                                                                                                                                                                                                                                                                               PRHSGIRAVGPYAWAGRCGRIGRWGVHQEAMMNLAIWHPRKVQSATIYQVTDRSHDGRTA
                                                                                                                                                                                                                                                                                                                                    PRGTG--ATRPVERAHRRGKLGTRXDDEANSIAWXVWHXSRVQ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            163 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18071 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12.2%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 78; DB:
Pred. No. 12;
7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7;
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Pred. No. 16;
16; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1546D37007E76ED1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hydrolase; Hypothetical
                                                                                                                                                                                                                                                     91
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 163;
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Embly AEO16791; AAN70217.1; -; Genomic_DNA.

RTIGR; PP4644; -...
RTIGR; PP4644; -...
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Best Local &
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Q88B24;
Q88B24;
01-JUN-2003 (TrEMBLrel. 24, Created)
01-JUN-2003 (TrEMBLrel. 24, Last seque)
01-MR-2004 (TrEMBLrel. 26, Last annot.
DNA repair protein Radh.
Name=radh; OrderedLocusNames=PP4644;
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Nelson K.E., Weinel C., Paulsen I.T., Dodson R.J., Hilbert H.,
Martins dos Santos V.A.P., Fouts D.E., Gill S.R., Pop M., Holmes
Brinkac L.M., Beanan M.J., DeBoy R.T., Daugherry S.C., Kolonay J
Madupu R., Nelson W.C., White O., Peterson J.D., Khouri H.M.,
Hance I., Chris Lee P., Holtzapple E.K., Scanlan D., Tran K.,
Moazzez A., Utterback T.R., Rizzo M., Lee K., Kosack D., Moestl
Wedler H., Lauber J., Stjepandic D., Hoheisel J., Straetz M., He
Kiewitz C., Eisen J.A., Timmis K.N., Duesterhoeft A., Tuemmler B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRINTS; PRO0830; ENDOLAPTASE.
SMART; SM00382; AAA; 1.
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Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales;
Pseudomonadaceae; Pseudomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TIGRFAM8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR001984; PepTidase_S16.
InterPro; IPR004504; RadA.
InterPro; IPR001553; RecA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR003593;
   128
                                                                               110
                                                                                                                                                           80
                                                                                                                                                                                                                                                                                                           20
                                                                                                                                                                                                                                                                                                                                                                                           19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                               --DR----SHDGRTARVPGDEITSTVSGWLSELGTQSPLADELARAVRIGDWPAAYAIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; TIGR00416; sms; 1.
PS50162; RECA_2; 1.
                                                                                                                                                                                                                                                                                                           WAGQCGECGAWNTLVETMIESGGAAAPSSGRAGWTGQQAQIKTLAEVSVEEIPRFTTSST
                                                                                                                                                                                                                                                                                                                                                                                       WAGRCGRIGRWGVHQEAMM------NLAIWHPRKVQSATIYQVT------
EESQQQVAM
                                                                               EHLSVEIAV 118
                                                                                                                                                           ELDRVLGGGLVDGSVVLIGGD----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          456 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               12.2%; ilarity 23.3%; Conservative 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      48741 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAA_ATPase
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 77.5;
Pred. No. 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              36CF6E54B5F5D265 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
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                                                                                                                                                               - PGIGKSTILLQTLCN-IAVG-MPALYVTG
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lonay J.F.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
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Search completed: 1 Job time : 31.6915

March 23, 5 secs

2006, 05:24:32

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Sequence:
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Perfect score:
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Maximum Match 100%
Listing first 45 summaries
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1: /cgm2_6/ptodata/1
2: /cgm2_6/ptodata/1
3: /cgm2_6/ptodata/1
4: /cgm2_6/ptodata/1
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/cgn2_6/ptodata/1/iaa/5_COMB.pep:*
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/cgn2_6/ptodata/1/iaa/H_COMB.pep:*
/cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
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/cgn2_6/ptodata/1/iaa/RE_COMB.pep:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

| 27                | 26                   | 25                   | 24                   | 23                   | 22                 | 21                 | 20                   | 19                   | 18     | 17                 | 16                | 15                | 14                | 13                  | 12                   | 11                   | 10              | 9               | 80               | 7                 | 0               | υī                 | 4                  | ω                    | 2                    | ᆫ                    | Result<br>No.  |
|-------------------|----------------------|----------------------|----------------------|----------------------|--------------------|--------------------|----------------------|----------------------|--------|--------------------|-------------------|-------------------|-------------------|---------------------|----------------------|----------------------|-----------------|-----------------|------------------|-------------------|-----------------|--------------------|--------------------|----------------------|----------------------|----------------------|----------------|
| 66                | 66                   | 66                   | 66                   | 66                   | 67                 |                    | 67.5                 | 67.5                 |        | 68                 | 68.5              | 68.5              | Θ                 | 69                  | 69.5                 | 9                    | 70              | 70              | 70               | 71                | 71              | 73                 | 73                 | 74                   | 75                   | 78                   | Score          |
| 10.4              | 10.4                 | 10.4                 | 10.4                 | 10.4                 | 10.5               |                    | 10.6                 | 10.6                 | 10.7   | 10.7               | 10.8              | 10.8              | 10.8              | 10.8                | 10.9                 | 10.9                 | 11.0            | 11.0            | 11.0             | 11.1              | 11.1            | 11.5               | 11.5               | 11.6                 | 11.8                 | 12.2                 | Query<br>Match |
| 591               | 535                  | 346                  | 209                  | 201                  | 522                | 522                | 414                  | 343                  | 575    | 571                | 544               | 544               | 451               | 625                 | 630                  | 329                  | 2517            | 2517            | 2517             | 292               | 292             | 868                | 449                | 330                  | 510                  | 310                  | Length         |
| N                 | Ŋ                    | N                    | N                    | N                    | N                  | N                  | N                    | N                    | N      | N                  | N                 | N                 | N                 | ຎ                   | N                    | N                    | N               | N               | ب                | ผ                 | ۲               | N                  | N                  | N                    | N                    | N                    | - BB           |
| US-09-561-077C-18 | US-09-252-991A-28410 | US-09-252-991A-32864 | US-09-252-991A-20905 | US-09-252-991A-16881 | US-09-949-016-9741 | US-09-949-016-9740 | US-09-252-991A-21182 | US-09-252-991A-17876 | 486    | US-10-104-047-3814 | US-09-919-039-270 | US-09-976-594-699 | US-09-477-962-118 | US-09-489-039A-9779 | US-09-252-991A-31264 | US-09-252-991A-27332 | US-09-367-764-5 | US-09-102-248-5 | US-08-801-263A-5 | US-09-098-580-4   | US-08-737-526-4 | US-09-949-016-9731 | US-10-104-047-2749 | US-09-252-991A-26360 | US-09-252-991A-25258 | US-09-252-991A-27948 | ID             |
| Sequence 18, Appl | 9                    |                      | æ                    | Sequence 16881, A    | Sequence 9741, Ap  | Sequence 9740, Ap  |                      |                      | 44868, | 3814,              | 270,              | 699,              | 118, 4            | Sequence 9779, Ap   |                      | 273                  | 5               | ņ               | 5                | Sequence 4, Appli | 4, App          | e 9731,            |                    | 26360,               | Sequence 25258, A    | Sequence 27948, A    | Description    |

| 66 10.4 718 2 US-09-252-991A-28229<br>65 10.2 152 2 US-09-252-991A-3080<br>65 10.2 359 2 US-09-252-991A-3080<br>65 10.2 513 2 US-09-270-767-46200<br>65 10.2 513 2 US-09-270-767-46200<br>65 10.2 534 2 US-09-252-991A-30678<br>65 10.2 574 2 US-09-252-991A-30678<br>64.5 10.1 366 2 US-09-902-540-13525<br>64.5 10.1 1467 2 US-09-9252-991A-28571<br>64.5 10.1 1467 2 US-09-252-991A-31021<br>64 10.0 568 2 US-09-252-991A-31021<br>64 10.0 1958 2 US-09-489-039A-9055<br>64 10.0 1958 2 US-09-489-039A-9055<br>64 10.0 2446 2 US-09-252-991A-31021<br>65 10.0 2446 2 US-09-949-016-11439<br>66 10.0 6095 2 US-09-949-016-11439<br>67 10.0 423 2 US-09-679-279-3<br>68 10.0 423 2 US-09-679-279-3<br>69 57 10.0 573 2 US-09-540-9731 | 45               | 44                 | 43              | 42              | 41                  | 40               | 39                   | 38                  | 37                   | 36       | 35                  | 34                  | ω<br>ω               | 32                  | 31                   | 30                   | 29                   |      |
|--|------------------|--------------------|-----------------|-----------------|---------------------|------------------|----------------------|---------------------|----------------------|----------|---------------------|---------------------|----------------------|---------------------|----------------------|----------------------|----------------------|------|
| 7718 2 US 718 2 US 719 2 US  | 63.5             | 63.5               | 63.5            | 64              | 64                  | 64               | 64                   | 64                  | 64.5                 | 64.5     | 64.5                | 65                  | 65                   | 65                  | 65                   | 65                   | 66                   |      |
|  | 10.0             | 10.0               | 10.0            | 10.0            | 10.0                | 10.0             | 10.0                 | 10.0                | 10.1                 | 10.1     | 10.1                | 10.2                | 10.2                 | 10.2                | 10.2                 | 10.2                 | 10.4                 |      |
| US-09-252-991A-28229 US-09-252-991A-18469 US-09-252-991A-3080 US-09-252-991A-30678 US-09-252-991A-30678 US-09-489-039A-8630 US-09-489-039A-86571 US-09-252-991A-17657 US-09-252-991A-17657 US-09-252-991A-31021 US-09-252-991A-31021 US-09-252-991A-31021 US-09-252-991A-31021 US-09-252-991A-31021 US-09-252-991A-31021 US-09-252-991A-31021 US-09-252-991A-31021 US-09-252-991A-31021 US-09-252-991A-31021 US-09-252-991A-31021 US-09-252-991A-31021 US-09-252-991A-31021 US-09-252-991A-31021 US-09-249-016-11439 US-09-249-016-11439 US-09-679-279-3 US-09-679-279-3   | 573              | 423                | 377             | 6095            | 2446                | 1958             | 777                  | 568                 | 1467                 | 565      | 366                 | 575                 | 534                  | 513                 | 359                  | 152                  | 718                  |      |
| US-09-252-991A-3869<br>US-09-252-991A-3869<br>US-09-252-991A-3080<br>US-09-270-767-46200<br>US-09-270-767-46200<br>US-09-252-991A-30678<br>US-09-252-991A-30571<br>US-09-252-991A-28571<br>US-09-252-991A-28571<br>US-09-252-991A-2055<br>US-09-252-991A-31021<br>US-09-252-991A-31021<br>US-10-152-886-93<br>US-09-949-016-11439<br>US-09-144-085-2<br>US-09-144-085-2<br>US-09-979-33<br>US-09-979-379-3<br>US-09-979-379-3  | N                | N                  | N               | N               | N                   | N                | N                    | N                   | N                    | N        | N                   | N                   | N                    | N                   | N                    | N                    | N                    |      |
|  | US-10-067-422-10 | US-09-902-540-9731 | US-09-679-279-3 | US-09-144-085-2 | US-09-949-016-11439 | US-10-152-886-93 | US-09-252-991A-31021 | US-09-489-039A-9055 | US-09-252-991A-17657 |          | US-09-902-540-13525 | US-09-489-039A-8630 | US-09-252-991A-30678 | US-09-270-767-46200 | US-09-252-991A-33080 | US-09-252-991A-18469 | US-09-252-991A-28229 | ***  |
|  | 10, Appl         | 9731, Ap           | 3, Appli        | 2, Appli        | 11439, A            | 93, Appl         | 31021, A             | 9055, Ap            | 17657, A             | 28571, A | 13525, A            | 8630, Ap            | 30678, A             | 46200, A            | 33080, A             | 18469, A             | 28229, A             | 19.5 |

## ALIGNMENTS

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Sequence 27948, Application US/09252991A

Patent No. 6551795

GENERAL INFORMATION:
APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS

PILE REFERENCE: 107196.136

CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142

SEQ ID NO 27948

LENGTH: 310
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                                                                                                                                                                                                                    GENERAL INFORMATION: APPLICANT: Marc J.
                                                                                                                                                                                                                                                             Sequence 25258, Application US/09252991A Patent No. 6551795
APPLICANT: MATC J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR APPLICATION NUMBER: US 60/074,798
PRIOR FILING DATE: 1998-02-18
PRIOR FILING DATE: 1998-07-27
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Local Similarity 26.0%;
es 27; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       237
                                                                                                                                                                                                                                                                                                                                                                                                          264 GERQAPPAGTWRQRLG---QCRQETARRLRRGQWPA----GGHL 300
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                                                                                                                                                                                                                                                                                                                                                                                                                                                      GDEITSTVSGWLSELGTQSPLADELARAVRIGDWPAAYAIGEHL 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGRRCAGAKGASGAAGRHG-----
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Pred. No. 0.58;
4; Mismatches
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Sequence 2749, Application US/10104047

PRECENT NO. 6943241

GENERAL INFORMATION:

APPLICANT: HELIX RESEARCH INSTITUTE

TITLE OF INVENTION: NO. 6943241e1 full length cD:

FILE REFERENCE: H1-A0105

CURRENT APPLICATION NUMBER: US/10/104,047

CURRENT FILING DATE: 2002-03-25

PRIOR APPLICATION NUMBER:
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US-10-104-047-2749
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; SEQ ID NO 25258
; LENGTH: 510
; TYPE: PRT
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LENGTH: 330
TYPE: PRT
ORGANISM: Pseudomonas aeruginosa
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Matches
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Best Local S
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TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
             NUMBER OF SEQ ID NOS: 4096
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                                                                                                                                                                                                                                                                                                                                     103
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                                                                                                                                                                                                                                                                                                                                     PAA 105
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                                                                                                                                                                                                                                                                                                                                                                                                                                                        TSRRPRGPGLPMAAPVAWARRRLGSGRSERSGRWPSRVCTTSMPTPRAQSSSAWIAAIGA 85
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25.2%; Pred. No. 1.9;
tive 13; Mismatches 59; Indels
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US-08-737-526-4
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US-09-949-016-9731
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STREET:
                               ADDRESSEE:
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GENERAL INFORMATION:

APPLICANT: VENTER, J. Craig et al.

APPLICANT: VENTER, J. Craig et al.

TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASS

TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF

FILE REFERENCE: CL001307

CURRENT APPLICATION NUMBER: US/09/949,016

CURRENT APPLICATION NUMBER: 60/241,755

PRIOR APPLICATION NUMBER: 60/241,755

PRIOR APPLICATION NUMBER: 60/237,768

PRIOR APPLICATION NUMBER: 60/237,768

PRIOR APPLICATION NUMBER: 60/231,498

PRIOR APPLICATION NUMBER: 60/231,498
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SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 9731
LENGTH: 868
                                                                                                                                                                                                                                                                                                          Sequence 4, Application US/08737526 Patent No. 5871966
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Best Local Similarity
Matches 18; Conserv
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LENGTH: 449
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                                                                                                                                                                         GENERAL INFORMATION:
APPLICANT: Kofod, Lene Venke
APPLICANT: Andersen, Lene No. 5871966boe
APPLICANT: Kauppinen, Markus Sakari
APPLICANT: Christgau, Stephan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Patent No. 6812339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR FILING DATE: 2000-09-08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: PRT
ORGANISM: Homo
                                                                                              APPLICANT: Kauppinen, Markus Sakari
APPLICANT: Christgau, Stephan
TITLE OF INVENTION: An Enzyme With Endo-1,3(4)-B-Glucanase
TITLE OF INVENTION: Activity
NUMBER OF SEQUENCES: 6
                                                                        NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Match 11.5%; Score 73; DB 2; Length 868; Local Similarity 28.1%; Pred. No. 9.1; les 18; Conservative 15; Mismatches 27; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    114 VEIA 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       186 ELSDVSQGGSKATTP----ASTANSDVATIFTDTPLKEENEGFVKVTDAPNKSEISKHIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                249 ELSDVSQGGSKATTP----ASTANSDVATIPTDTPLKEENEGFVKVTDAPNKSEISKHIE 304
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3B: No. 58719660 No. 5871966disk of No. 5871966th America,
405 Lexington Avenue
New York
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28.1%; Pred. No. 3.8;
tive 15; Mismatches 2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                              APPLICANT: Andersen, Lene No. 6140096
APPLICANT: Kauppinen, Markus Sakari
APPLICANT: Christgau, Stephan
TITLE OF INVENTION: An Enzyme With En
TITLE OF INVENTION: Activity
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USA
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskerr
COMPUTER: IPM
OPERATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Valeta, Gregg A
REGISTRATION NUMBER: 35,127
REFERENCE/DOCKET NUMBER: 41'
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-867-0123
             COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM COmpatible
OPERATING SYSTEM: DOS
SOFTWARE: FASTSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/098,580
FILING DATE:
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Kofod, Lene Venke
APPLICANT: Andersen, Lene No.
APPLICANT: Kauppinen, Markus
APPLICANT: Christgau, Stephan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 08-NOV-1996
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: FastSEQ for Windows Version 2.0 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/737,526
FILING DATE: 08-NOV-1996
                                                                                                                                                                                                                           STREET:
CITY: 1
                                                                                                                                                                    COUNTRY: USA
ZIP: 10174-6401
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STRANDEDNESS: si
TOPOLOGY: linear
                                                                                                                                                                                                         STATE:
                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: 212-878-9655
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QPPTYSGFNLVWTDTFAGNGGTSPNQNNWNI---ITGNLNVNAEQETYSSSTANV--QLS 75
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                                                                                                                                                                                                                                           405 Lexington Avenue
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RESULT 8
US-08-801-263A-5
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Best Local Similarity
                TELEFAX: 919-881-3175
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
APPLICANT: Johnst
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SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Davis, Nancy L.
APPLICANT: Simpson, Dennis A.
TITLE OF INVENTION: System for the In Vivo Delivery and
TITLE OF INVENTION: Expression of Heterologous Genes in the Bone Marrow
                                                                                                    CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Sibley, Kenneth D.
REGISTRATION NUMBER: 31,665
REFERENCE/DOCKET NUMBER: 54
                                                                                                                                                                                          SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION UMBER: US/08/801,263A FILING DATE: 19-FEB-1997
                                                                    TELECOMMUNICATION INFORMATION: TELEPHONE: 919-420-2200
                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
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APPLICATION NUMBER:
FILING DATE: 08-NOV-
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Charlotte 58114
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                                                                                                                                                                                                                                                                                                                                             ZIP:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
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                                                                                                                                                                                                                                                                                                                                                                                                            E: Bell Seltzer Park & Gibson,
1211 East Morehead Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 292 amino acids
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                                                                                                                                                                                                                                                                                                                                                                            5811407th Carolina
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amino acids
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26.5%;
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Pred. No. 3.7;
18; Mismatches
                                                                                                          5470-147
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CURRENT AFFLICATION NUMBER: US/09/102,2
FILING DATE:
CLASSIFICATION DATA:
PRIOR APPLICATION DATA:
APPLICATION UNMBER: US 08/801,7
FILING DATE:
19-FEB-1997
ATTORNEY/AGENT INFORMATION:
NAME: SIDIE, Kenneth D.
REGISTRATION NUMBER: 31,665
REFERENCE/DOCKET NUMBER: 5470-
TELECOMMUNICATION INFORMATION:
TELEFAX: 919-420-2200
TELEFAX: 919-420-2200
TELEFAX: 919-420-2200
TELEFAX: 919-420-2200
SEQUENCE CHARACTERISTICS:
LENGTH: 2517 amino acids
TYPE: amino acids
TOPOLOGY: linear
MOLECULE TYPE: protein
US-09-102-248-5
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US-09-102-248-5
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; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-801-263A-5
                                                                     Query Match 11.0%; Score 70; DB 2; Length 2517; Best Local Similarity 20.3%; Pred. No. 87; Matches 32; Conservative 19; Mismatches 47; Indels 60; Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
APPLICANT: Johnston, Robert E.
APPLICANT: Johnston, Robert E.
APPLICANT: Davis, Nancy L.
APPLICANT: Simpson, Dennis A.
TITLE OF INVENTION: System for the In Vivo Delivery and
TITLE OF INVENTION: Expression of Heterologous Genes in the Bone Marrow
NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: ISM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: Charlotte
STATE: No. 6008035th Carolina
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5 RPRHSGIRAVGPYAWAGRCGRIGRWGVHQEAMMNLAIW--HPRK-VQSATIYQVTDR--- 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5 RPRHSGIRAVGPYAWAGRCGRIGRWGVHQEAMMNLAIW--HPRK-VQSATIYQVTDR--- 58
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1211 East Morehead Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 USA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US 08/801,263
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| DELARAVRIGDWPAAYAIGEHLSV 114   | 91<br>918  | B 6 8  |
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| SHDGRTARVPGDEITSTVSGWLSELGTQSPLA<br>   | 858<br>858   | 유 원    |
| RPRHSGIRAVGPYAWAGRCGRIGRWGVHQEAMMNLAIWHPRK-VQSATIYQVTDR<br>     :  | 810  | 유<br>양 |
| 11.0%; Score 70; DB 2; Length 2517;<br>Similarity 20.3%; Pred. No. 87;<br>2; Conservative 19; Mismatches 47; Indels 60; Gaps   | Query Match<br>Best Local Si<br>Matches 32;  |        |
| E 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2  | TELEFAX INFORMATION SEQUENCE LENGTH: TYPE: TYPE: TOPOLOG MOLECULE -09-367-764-   | G      |
| NAME: Sibley, Kenneth D. REGISTRATION NUMBER: 31,665 REFERENCE/DOCKET NUMBER: 5470-147 LECOMMUNICATION INFORMATION: TELECOMMUNICATION 310-2300   | NAME: Sibley, I REGISTRATION NU REFERENCE/DOCKE TELECOMMUNICATION TELECOMMUNICATION  |        |
| CLASSIFICATION: IOR APPLICATION DATA: IOR APPLICATION UMMBER: US 08/801,263 FILING DATE: 19-FEB-1997 TORNEY/AGENT INFORMATION:   | CLASSIFICATION: PRIOR APPLICATION APPLICATION NUM FILING DATE: 1 ATTORNEY/AGENT IN   |        |
| MPUTER READABLE FORM: MEDIUM TYPE: Floppy disk COMPUTER: IBM PC compatible COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, Version #1.30 RRENT APPLICATION DATA: APPLICATION DATA: BPLICATION DATE: US/09/367,764                       | COMPUTER RE MEDIUM TY COMPUTER: OPERATING SOFTWARE: CURRENT APP CURRENT APPLICATI  |        |
|  | ADDRESSEE: 1 STREET: 1 CITY: Cha STATE: No COUNTRY: ZIP: 2823  |        |
| '64-5 5, Application US/09367764 1, 6583121 INFORMATION: ANT: Johnston, Robert E. ANT: Davis, Nancy L. ANT: Simpson, Dennis A. OF INVENTION: System for the In Vivo Delivery and OF INVENTION: Expression of Heterologous Genes in the Bone Marrow OF SQUENCES: 12 PONDENCE ADDRESS: | WESULT 10 US-09-367-764-5 ; Sequence 5, Appli ; Sequence 5, Appli ; Patent NO. 659312 ; GENERAL INFORMAT: Jo APPLICANT: Jo ; APPLICANT: Sai ; APPLICANT: Sai ; APPLICANT: STILE OF INVEN TITLE OF INVEN ; NUMBER OF SEQUENCE ; CORPERSPONDENCE |        |
| DELARAVRIGDWPAAYAIGEHLSV 114<br>: :  | 91<br>918  | 용 성    |
| QPVTAIVSTLHYDGKMKTTNPCKKNIBIDITGATKPKPGDIILTCFRGWVKQLQIDYPGH   | 858  | 밁      |
| GR   | 59   | Ş      |
| XVXHXVVLCGUVXQCGVVXMMQLXVXVXVXVXXXLCXXIVXXXVXXXXXXXXXXX  | 810  | 밁      |

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RESULT 13
US-09-489-039A-9779
; Sequence 9779, Application US/09489039A
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APPLICANT: Marc J. Rubenfield et al.
APPLICANT: MATC J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NO 31264
LENGTH: 630
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SEQ ID NO 27332
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Best Local Similarity
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                            -09-252-991A-31264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
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CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION NUMBER: US/09/252,991A CURRENT FILING DATE: 1999-02-18
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TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION NUMBER: US 60/094,190 PRIOR FILING DATE: 1998-07-27
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                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       216 QRPAGRG-RALVPRAWRG-FARLRLSGAQWQRQRPARVWRGRPRRCRAGPGAGVSRRAPG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          62 GRT-----ARVPGDEITSTVSGWLSELGTQSPLADELARAVRIGDWPAAYAIGE 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                35;
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                                                                                                                                                                                                HPWPESSATELSGANRAHWAQSKTLPIPDNKLAEIFRAAVSRL----ERADETLALAEMV 240
                                                                                                               SDWQAQYSYSGTVNAKLA 258
                                                                                                                                                                                                                                         HPRKVQSATIYQVTDRSH--DGRTARVPGDEITSTVSGWLSELGTQSPLADE-LARAVRI 99
                                                                                                                                                                                                                                                                                        Conservative
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1998-02-18
                                                                                                                                                                                                                                                                                                        10.9%; Score 69.5;
28.2%; Pred. No. 15;
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CURRENT APPLICATION NUMBER: US/09/477,962
CURRENT FILLING DATE: 2000-01-05
PRIOR APPLICATION NUMBER: 60/115,435
PRIOR APPLICATION NUMBER: 60/118,435
PRIOR FILING DATE: 1999-01-06
PRIOR PRIOR DATE: 1999-02-05
NUMBER OF SEQ ID NOS: 133
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                                                                                                                                                                                                                                                                                                                                        SOFTWARE: PatentIn Ver.
SEQ ID NO 118
LENGTH: 451
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GENERAL INFORMATION:
APPLICANT: Gary Breton et. al
APPLICANT: Gray Breton et. al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA
TITLE OF INVENTION: PNEUMONIAE FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 2709.2004001
CURRENT APPLICATION NUMBER: US/09/489,039A
CURRENT FILING DATE: 2000-01-27
PRIOR APPLICATION NUMBER: US 60/117,747
PRIOR FILING DATE: 1999-01-29
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: BLEOMYCIN GENE CLUSTER COMPONENTS AND THEIR USES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
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                                                                                                                                                                                                                                                                                                  TYPE: PRT ORGANISM: Streptomyces verticillus
                                                                                                                                                                                                                                                            OTHER INFORMATION: ORF33
                                                                                                                                                                                                                                                                                    FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Klebsiella pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
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102 QVTGVGVGREVAGGDDELGAEDRPHARQ--RLDDLGLWMAAERLADLL 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         485 RLYWSAQPPVSTPLARVLATRTGMGGFPEGWAPGEH 520
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                                   66 RVPGDEITSTVSGWLSELGTQS-PLADELARAVRIGDWPAAYAIGEHL 112
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                                                                                                                                                            30;
                                                                         PHHAG-----LGRHVEHSSQAAAVAL-GPMQVASATTGVAGDGHQAGRRG 101
                                                                                                                   PRHSGIRAVGPYAWAGRCGRIGRWGVHQEAMMNLAIWHPRKVQSATIYQVTDRSHDGRTA 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QWGKGAVSLMEIPTTGETLDNIVCFWQPEKAVKA--
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                                                                                                                                                            Conservative
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                                                                                                                                                       10.8%; Score 68.5; I
27.8%; Pred. No. 13;
Live 13; Mismatches
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RESULT 15 US-09-976-594-699

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Sequence 699, Application US/09976594

Patent No. 6673549

GENERAL INFORMATION:
APPLICANT: Burness, Michael
APPLICANT: Buchbinder, Jenny
ITILE OF INVENTION: GENES EXPRESSED IN C3A LIVER CELL CULTURES TREATED WITH STEROIDS
FILE REFERENCE: PA-0041 US
CURRENT FILING DATE: 2001-10-12
PRIOR APPLICATION NUMBER: US/09/976,594
CURRENT FILING DATE: 2000-10-12
PRIOR APPLICATION NUMBER: 60/240,409
PRIOR FILING DATE: 2000-10-12
PRIOR FILING DATE: 2000-10-12
DESCRIPTION OF SEQ ID NOS: 1143
SEQ ID NO 699
LENGTH: 544
TYPE: PRT
ORGANISM: Homo sapiens
FEATURE:
PRATURE:
NAME/KEY: misc_feature
OTHER INFORMATION: Incyte ID No. 6673549 4113161CD1
US-09-976-594-699
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Search completed: March 23, 2006, 05:30:20 Job time: 9.2844 secs
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                                                                                                      136 E-ANAERIVQTLCTVRGAALKVGQMLSIQ 163
                                                                                                                                                          92 ELARAVRIGDW-----PAAYAIGEHLSVE 115
                                                                                                                                                                                                               79 S---RERKVPASRISRLANFGGLAVGLGLGVLAEMAKKSMPGGRLQSEGGSGLDSSPFLS 135
                                                                                                                                                                                                                                                                   59 SHDGRTARVPGDEITSTVS-----GWLSELGTQ-----SPLAD 91
                                                                                                                                                                                                                                                                                                                     25 GALGPGPHRW-GPCG--GSWAQKFYQDGPGRGLGEEDIRRAREARPRKTPRP---QLSDR 78
                                                                                                                                                                                                                                                                                                                                                      10 GIRAVGPYAWAGRCGRIGRW-------GVHQEAMMNLAIWHPRKVQSATIYQVTDR 58
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Result
No.
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1: /cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*

2: /cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*

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|--|------------|---------------------|----------------------|---------------------|---------------------|------------------|----------------------|---------------------|--------------------|----------------------|---------------------|--------------------|---------------------|----------------------|------------------|-----------------|------------------|----------------------|----------------------|
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| US-10-282-122A-49874 US-10-437-963-1184007 US-10-4779-557-95 US-10-378-083-6 US-10-481-265-19 US-10-481-265-19 US-10-437-963-201707 US-10-437-963-201707 US-10-437-963-201707 US-10-437-963-136807 US-10-467-665-14 US-10-467-665-14 US-10-467-665-14 US-10-467-665-14 US-10-467-665-14 US-10-467-68-2938 US-10-482-115-246803 US-10-425-115-246803 US-10-425-115-246803 US-10-732-923-10307 ALIGNMENTS  |            | <b>U</b>            | 4                    | ហ                   | 4                   | 4                | 4                    | 4                   | 4                  | 4                    | 4                   | w                  | 4.                  | 4.                   | v                | 4.              | u                | 4                    | 4                    |
|  | ALIGNMENTS | US-10-732-923-10307 | US-10-425-115-246803 | US-10-450-763-33073 | US-10-408-765A-2938 | US-10-467-685-14 | US-10-437-963-136807 | US-10-425-114-52031 | US-10-156-761-9791 | US-10-437-963-201707 | US-10-156-761-15071 | US-09-738-626-5259 | US-10-156-761-14136 | US-10-424-599-153232 | US-10-481-265-19 | US-10-378-083-6 | US-10-779-597-95 | US-10-437-963-184007 | US-10-282-122A-49874 |
|  |            | 10307, A            | 246803,              | 33073, A            | 2938, Ap            | 14, Appl         | 136807,              | 52031, A            | 9791, Ap           | 201707,              | 15071, A            | 5259, Ap           | 14136, A            | 153232,              | 19, Appl         |                 | 95, Appl         | 184007,              | 49874, A             |

#### US-10-425-114-39387; Sequence 39387, Application US/10425114; Publication No. US20040034888A1 밁 APPLICANT: Andersen, Peter APPLICANT: Rosenkrands, Ida APPLICANT: Stryhn, Anette TITLS OF INVENTION: Therapeutic TB Vaccine FILE REFERENCE: SSISAUSA CURRENT APPLICATION NUMBER: US/10/617,038 CURRENT FILING DATE: 2003-07-11 PRIOR APPLICATION NUMBER: DK PA 2002 01098 PRIOR APPLICATION NUMBER: US 60/401,725 PRIOR FILING DATE: 2002-08-07 NUMBER OF SEQ ID NOS: 187 S 8 , ORGANISM: Mycobacterium tuberculosis US-10-617-038-30 RESULT 2 GENERAL INFORMATION: APPLICANT: Liu, Jingdong APPLICANT: Zhou, Yihua APPLICANT: Kovalic, David K. APPLICANT: Screen, Steven E APPLICANT: Tabaska, Jack E APPLICANT: Tabaska, Jack E APPLICANT: Cao, Yongwei TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement SOFTWARE: PE Query Match Best Local Similarity Matches 120; Conserv GENERAL INFORMATION: LENGTH: 120 TYPE: PRT 61 5 ب PatentIn version 3.2 DGRTARVPGDEITSTVSGWLSELGTQSPLADELARAVRIGDWPAAYAIGEHLSVEIAVAV 120 DGRTARVPGDEITSTVSGWLSELGTQSPLADELARAVRIGDWPAAYAIGEHLSVEIAVAV 100.0%; Score 637; DB 4; ilarity 100.0%; Pred. No. 1.4e-63; Conservative 0; Mismatches 0; Length 120; Indels 0 Gaps 120 60 60

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APPLICANT: Diegel, Michael
APPLICANT: Vidovic, Damir
TITLE OF INVENTION: Compositions and Methods Employing Alternative
TITLE OF INVENTION: Reading Frame Polypeptides for the Treatment of
TITLE OF INVENTION: Cancer and Infectious Disease
FILE REFERENCE: 11311.1003U
CURRENT APPLICATION NUMBER: US/10/794,514A
CURRENT FILING DATE: 2004-03-05
NUMBER OF SEQ ID NOS: 733
SOPTWARE: FRASTSEQ for Windows Version 4.0
SEQ ID NO 328
LENGTH: 1167
CORGANISM: Derived From Human Sequence
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CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 39387
LENGTH: 551
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                                                                                                                                                                                                                                                                                                               Length 1167;
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RESULT 5
US-10-424-599-217918
; Sequence 217918, Application US/10424599
; Publication No. US20040031072A1
; GENERAL INFORMATION:
; APPLICANT: La ROBA Thomas J
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US-10-282-122A-68099
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APPLICANT: Wang, Lia
APPLICANT: APPLICANT: Malone,
APPLICANT: Haselbec
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                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
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Publication No. US20040029129A1
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CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT FILING DATE: 2003-02-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Remaining Prior Application data removed NUMBER OF SEQ ID NOS: 78614
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR FILING DATE: 2000-09-06
PRIOR APPLICATION NUMBER: 60/230,347
PRIOR FILING DATE: 2000-09-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION NUMBER: 60/207,727
PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: 60/230,335
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PRIOR FILING DATE: 2001-02-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: 60/267,636
PRIOR FILING DATE: 2001-02-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION NUMBER: 60/257,931 PRIOR FILING DATE: 2000-12-22
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PRIOR APPLICATION NUMBER: 60/253,625
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 456
                                                                                                                                                                                                                                                                                                                                                                                      Match 12.2%;
Local Similarity 23.3%;
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                                                                                                                                                                                      EHLSVEIAV 118
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Zamudio, cm_
Tone, Cheryl
Tone
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Forsyth, R.
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Zyskind, Judith
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Pred. No. 7.2;
15; Mismatches
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; OTHER INFORMATION: Clone ID: PAT_MRT4530_6855C.1.pep
US-10-437-963-170212
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SEQ ID NO 170212
LENGTH: 272
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                                                                                                Query Match
Best Local (
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Best Local
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CURRENT FILING DATE: 2003-05-14
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APPLICANT:
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LOCATION: (1)..(272)
OTHER INFORMATION: unsure at all Xaa locations
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCATION: (1)..(278)
OTHER INFORMATION: unsure at all Xaa locations
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
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  71
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                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                        QRPRHSGIRAVG---PYA----WAGRCGRIGRWGVHQEAMMNLAIWHPRKVQSATIYQV 55
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Cao, Yongwei
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RRPRRGRREAARPRPYGRRRPWÄHRSGGRERGGKXETRRRSTÄ--HPR--STÄTXEKA 126
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Cao Yongwei
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                                                                                                     Score 75.5;
Pred. No. 6
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                                                                                                                      DB 4; Length 272;
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                                                                                                                                                       APPLICANT:
APPLICANT:
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                                                                                                                                                                                                                                                                                                          Sequence 149941, Application US/10437963 Publication No. US20040123343A1
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Best Local Similarity
APPLICANT: Li, Ping
TITLE OF INVENTION: Rice Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53221)B
CURRENT APPLICATION NUMBER: US/10/437,963
CURRENT FILING DATE: 2003-05-14
                                                                                                                                                                                                                    APPLICANT: La Rosa, Thomas J. APPLICANT: Kovalic, David K. APPLICANT: Zhou, Yihua
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CURRENT FILING DATE: 2005-04-04
PRIOR APPLICATION NUMBER: 60/157,832
PRIOR FILING DATE: 1999-10-05
PRIOR APPLICATION NUMBER: 60/160,191
PRIOR APPLICATION NUMBER: 60/161,932
PRIOR APPLICATION NUMBER: 60/161,932
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APPLICANT: et al.
TITLE OF INVENTION: DETECTION KIT, SUCH AS
TITLE OF INVENTION: ARRAYS, FOR DETECTING
TITLE OF INVENTION: DROSOPHILA GENES.
                                                                                                                                   APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    81 SELGTQSPLADELARAVRIGDWPAAYAIGEHLSVEIA 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28 RWGVHQEAMMNLAIWHPRKVQSATIYQVTDRS-HDGRTARV-----PGDEITSTVSGWL 80
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                                                                                                                     Cao, Yongwei
Wu, Wei
Boukharov, Andrey A.
Barbazuk, Brad
                                                                                                                                                                                  Zhou, III.
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29.9%;
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Pred. No. 4.7e+02;
5; Mismatches 41
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EXPRESSION OF 10,000 OR MORE
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RESULT 10
US-10-282-122A-62103
; Sequence 62103, Application US/10282122A
                                                                                                                                                                                                                                                                                                                                                      ; PRIOR APPLICATION NUMBER: JP 2001-272697
; PRIOR FILING DATE: 2001-08-02
; NUMBER OF SEQ ID NOS: 15109
; SEQ ID NO 8113
; LENGTH: 284
; TYPE: PRT
; ORGANISM: Streptomyces avermitilis
US-10-156-761-8113
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: ISHKAWA, JUN
APPLICANT: HORIKAWA, HIROSHI
APPLICANT: SHEA, TADAYOSHI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, WASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
FILE REFERENCE: 249-262
CURRENT APPLICATION NOWBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR FILING DATE: 2001-05-30
PRIOR FILING DATE: 2001-05-30
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LENGTH: 279
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Best Local (
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Best Local Similarity
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ORGANISM: Oryza sativa
FEATURE:
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LOCATION: (1)..(279)
OTHER INFORMATION: unsure at all Xaa locations
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                                                                                                                                                                                                                                                                                                Local Similarity
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                                                                                                           144 GQPLSDWP 151
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                                                                                                                                                                                                                               36 MWWLAIWHPRKVQSATIYQVTDRSHDGRTARVPGDEITSTVSGWLSELGTQSPLADELAR
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                                                                                                                                                96 AVRIGDWP 103
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                                                                                                                                                                                         VVNAGGLHPAGLAAATRELIARHGHDLRVSHIEGDDVFGSLDG----LGQAGHCLPHLTS 143
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                                                                                                                                                                                                                                                                      11.6%; Score 74; DB 25.0%; Pred. No. 10; ative 12; Mismatches
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; ORGANISM: Mycobacterium avium US-10-282-122A-62103
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US-09-864-761-43789
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PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR APPLICATION NUMBER: 60/230,347
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR APPLICATION NUMBER: 60/253,625
PRIOR APPLICATION NUMBER: 60/253,625
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/257,931
Sequence 43789, Application US/09864761
Patent No. US20020048763A1
GENERAL INFORMATION:
APPLICANT: Penn, Sharron G.
APPLICANT: Rank, David R.
APPLICANT: Hanzel, David K.
APPLICANT: Chen, Wensheng
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APPLICANT: Wang, Li
APPLICANT: Zamudio
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Best Local Similarity
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APPLICANT:
APPLICANT:
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PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
PRIOR FILING DATE: 2000-05-23
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CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT FILING DATE: 2003-02-20
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PRIOR FILING DATE: 2001-02-09
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR FILING DATE: 2001-02-16
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ENGTH: 535
                                                                                                                                                                                                                                                                                                             379 GIRVPGFITWPG-FARQGQIGTAFSTVMDIA-----PTLLELAGTSHPGTAYR--G
                                                                                                                                                                                                                              487 YDLA 490
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Yamamoto, Robert
Forsyth, R.
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Zyskind, Judith
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Trawick, John
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Malone, Cheryl
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Pred. No. 22;
LS; Mismatches
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PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: US 09/632,366
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CURRENT FILING DATE: 2001-05-23
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                                                                                                                                                                                                                                                                                         OTHER INFORMATION: MAP TO AC005920.1
OTHER INFORMATION: EXPRESSED IN BOIR MARROW, SIGNAL = 0.68
OTHER INFORMATION: EXPRESSED IN LUNG, SIGNAL = 0.68
OTHER INFORMATION: EXPRESSED IN LUNG, SIGNAL = 0.53
OTHER INFORMATION: EXPRESSED IN PETAL LIVER, SIGNAL = 0.69
OTHER INFORMATION: EXPRESSED IN BUILT LIVER, SIGNAL = 0.61
OTHER INFORMATION: EXPRESSED IN BRAIM, SIGNAL = 0.97
OTHER INFORMATION: EXPRESSED IN BRAIM, SIGNAL = 0.97
OTHER INFORMATION: EXPRESSED IN BOILT LIVER, SIGNAL = 0.97
OTHER INFORMATION: EXPRESSED IN BRAIM, SIGNAL = 0.97
OTHER INFORMATION: EXPRESSED IN BRAIM, SIGNAL = 0.97
OTHER INFORMATION: EXPRESSED IN BRAIM, SIGNAL = 0.97
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ENGTH: 69
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APPLICATION NUMBER: US 60/234,687
FILING DATE: 2000-09-21
APPLICATION NUMBER: US 09/608,408
FILING DATE: 2000-06-30
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                                                                                         ELSDVSQGGSKATTP----ASTANSDVATIPTDTPLKEENEGFVKVTDAPNKSEISKHIE 57
                                                                                                                                   QVTDRSHDGRTARVPGDEITSTVSGWLSELGTQSPLADELARAVRIGDWPAAYAIGEHLS
VQVA 61
                                                                                                                                                                                 Conservative
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                                                                                                                                                                                                    11.5%; Score 73; DB 28.1%; Pred. No. 2.4;
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                                                                                                                                                                                 Mismatches
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                                                                                                                                                                                                                          DB 3; Length 69
                                                                                                                                                                                 27;
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RESULT 12

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                                                                                                                                                                                                             ; ORGANISM: Escherichia coli CFT073
US-10-732-923-10308
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CURRENT FILING DATE: 2002-03-27
PRIOR APPLICATION NUMBER: PCT/US00/26524
PRIOR FILING DATE: 2000-09-28
PRIOR APPLICATION NUMBER: US 60/157,137
PRIOR FILING DATE: 1999-09-29
PRIOR APPLICATION NUMBER: US 60/163,280
PRIOR APPLICATION NUMBER: US 60/163,280
PRIOR FILING DATE: 1999-11-03
                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/10/732,923
CURRENT FILING DATE: 2003-12-10
PRIOR APPLICATION NUMBER: 10/310,154
PRIOR FILING DATE: 2002-12-04
NUMBER OF SEQ ID NOS: 24149
SEQ ID NO 10308
LENGTH: 365
TWORE COMMERCE OF SECULO NUMBER OF SEQ ID NO 10308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: Pat
SEQ ID NO 6371
                                                                                                                                      Matches
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Publication No. US20030109690A1
                                                                                                                                                      Query Match
Best Local S
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Edgerton, Michael D
TITLE OF INVENTION: TRANSGENIC PLANTS WITH
FILE REFERENCE: 38-15(52796)C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Ruben et al.
TITLE OF INVENTION: Colon and Colon Cancer Associated Polynucleotides and Polypeptide
FILE REFERENCE: PA005P1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQ ID NOS: 8564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: MISC FEATURE LOCATION: (140)
OTHER INFORMATION: Xaa equals any of the naturally occurring L-amino acids
                                                                                                                                                                                                                                                     TYPE: PRT
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ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 258
                                                                                                                                                      Local Similarity
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                                                                                              19 WAGRCG-----RIGRW-----GVHQE-AMMNLAIWHPRKVQSATIYQVTDRSHDGRTARV 67
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PGDEITSTVSGWLSELGTQSPLADELARAVRI-GDWPAAYAIGE 110
                                                          YAGAPGIHSQEQIAAWKKITAGVHAENGHMAVQLWHTGRISHASLQ---
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Pred. No.
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PGGQ--APVAPSALSAGTRTSLRDENGQAIRVETSMPRALELGE

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Sequence 2749, Application US/10104047

Publication No. US20030236392A1

GENERAL INFORMATION: NO. US20030236392A1e1 full length cDNA

FILE OF INVENTION: NO. US20030236392A1e1 full length cDNA

FILE REFERENCE: H1-A0105

CURRENT APPLICATION UMMBER: US/10/104,047

CURRENT FILING DATE: 2002-03-25

PRIOR APPLICATION NUMBER:

PRIOR APPLICATION NUMBER:

PRIOR APPLICATION NUMBER:

PRIOR FILING DATE:

NUMBER OF SEQ ID NOS: 4096

SOFTWARE: Patentin Ver. 2.1

SEQ ID NO 2749
PRIOR APPLICATION NUMBER: 60/253,625
PRIOR PILING DATE: 2000-11-27
PRIOR PILING DATE: 2000-12-27
PRIOR PILING DATE: 2000-12-22
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR PILING DATE: 2001-02-16
PRIOR PILING DATE: 2001-02-16
PRIOR PILING DATE: 14110
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 10450
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US-09-815-242-10450
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US-10-104-047-2749
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APPLICANT:
APPLICANT:
                                                                                                                                                                                                                  PRIOR
PRIOR
                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: Identification of Essential Genes in TITLE OF INVENTION: Prokaryotes FILE REFERENCE: ELITRA.011A CURRENT APPLICATION NUMBER: US/09/815,242 CURRENT FILING DATE: 2001-03-21 PRIOR APPLICATION NUMBER: 60/191,078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                               PRIOR
PRIOR
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APPLICANT: Ohlsen, Ka
APPLICANT: Zyskind,
                                                                                                                                                                                                                                                                                                       PRIOR FILING DATE: 2000-03-21
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
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TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                               APPLICATION NUMBER: 60/242,578 FILING DATE: 2000-10-23
                                                                                                                                                                                                                                                            APPLICATION NUMBER: 60/207,727 FILING DATE: 2000-05-26
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Xu, H. Howard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Carr, Grant J.
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Trawick, John D.
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Zyskind, Judith W.
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; ORGANISM: Escherichia coli
; FEATURE:
; NAME/KEY: VARIANT
; LOCATION: (1)...(715)
; OTHER INFORMATION: Xaa = Any
US-09-815-242-10450
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Best Local :
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 989
                                                                                                                             578 STVREVGHYSCRSMTGNCAALAALADEPGYAQINTEDAKRLGIEDEAL----VWVHSRKG 633
                                                              634 KIITRAQVSDRPNKG------AIYMTYQWWIGACNELVTENLSPITKTPEYKYCAVRV 685
                             97 VRIGDWPAA--YAIGEH 111
                                                                                             48 QSATIYQVTDRSHDGRTARVPGDEITSTVSGWL---SELGTQ--SPLADE-----LARA 96
                                                                                                                                                          9 SGIRAVGPY---AWAGRCGRIG-------RWGVHQEAMMNLAIW-HPRKV 47
EPIADQRAAEQYVIDEY
                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                       Xaa = Any Amino Acid
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Search completed: March 23, 2006, 06:28:20 Job time: 26.2352 secs

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Maximum DB seq length: 200000000
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Perfect score:
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Maximum Match 100%
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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637
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/cgn2_6/ptodata/1/pubpaa/USO6_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/USO7_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/USO7_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/USO7_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/USO7_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/USO7_NEW_PUB.pep:*
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  US-11-087-099-5634
US-10-467-657-2722
US-10-467-657-2722
US-10-509-464-5
US-11-072-512-3814
US-11-072-512-3814
US-11-000-463-745
US-11-000-463-773
US-11-012-067-722
US-10-821-234-1283
US-11-096-568A-18439
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US-11-096-568A-24503
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Sequence 5634, Ap
Sequence 2749, App
Sequence 272, App
Sequence 47, Appli
Sequence 3814, App
Sequence 3814, App
Sequence 745, App
Sequence 72, Appl
Sequence 1283, App
Sequence 1283, App
Sequence 18440, Ap
Sequence 18439, A
Sequence 24502, A
Sequence 24502, A
Sequence 24502, A
Sequence 2540, App
Sequence 20, Appl
Sequence 2000, App
Sequence 2000, App
Sequence 554, App
Sequence 514, App
Sequence 5814, App
Sequence 5814, App
Sequence 5814, App
Sequence 5814, App
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US-11-072-512-2749
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US-11-087-099-5634
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          APPLICANT
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|----------------------|-------------------|-------------------|--------------------|-------------------|-------------------|--------------------|-------------------|--------------------|----------------------|----------------------|-------------------|--------------------|----------------------|------------------|-------------------|-------------------|--------------------|--------------------|--------------------|
| 59.5                 | 60                | 60                | 60.5               | 60.5              | 60.5              | 13                 | 61                | 61                 | 61                   | 61                   | 61.5              | 61.5               | 61.5                 | 61.5             | 61.5              | 61.5              | 61.5               | 61.5               | 62                 |
| 9.3                  | 9.4               | 9.4               | 9.5                | 9.5               | 9.5               | 9.6                | 9.6               | 9.6                | 9.6                  | 9.6                  | 9.7               | 9.7                | 9.7                  | 9.7              | 9.7               | 9.7               | 9.7                | 9.7                | 9.7                |
| 218                  | 615               | 520               | 398                | 137               | 137               | 424                | 424               | 356                | 324                  | 289                  | 358               | 341                | 319                  | 283              | 283               | 283               | 253                | 127                | 254                |
| 7                    | σ                 | 7                 | 7                  | σ                 | σ                 | σ                  | σ                 | 7                  | 7                    | 7                    | 7                 | 7                  | 7                    | 7                | 7                 | σ                 | 7                  | 7                  | 7                  |
| US-11-096-568A-19823 | US-10-995-561-940 | US-11-055-822-862 | US-11-052-554A-252 | US-10-475-075-479 | US-10-475-075-196 | US-10-467-657-6344 | US-10-467-657-90  | US-11-087-099-1946 | US-11-096-568A-23986 | US-11-096-568A-23987 | US-11-146-428-112 | US-11-087-099-9325 | US-11-096-568A-17724 | US-11-073-460-50 | US-11-073-457-50  | US-10-632-150-50  | US-11-054-515-1249 | US-11-072-512-2939 | US-11-054-515-1857 |
| Sequence 19823, A    | Sequence 940, App | Sequence 862, App | Sequence 252, App  | Sequence 479, App | 196, 1            | 6344               | Sequence 90, Appl | Sequence 1946, Ap  | Sequence 23986, A    | Sequence 23987, A    | Sequence 112, App | Sequence 9325, Ap  | Sequence 17724, A    | •                | Sequence 50, Appl | Sequence 50, Appl | Sequence 1249, Ap  | Sequence 2939, Ap  | Sequence 1857, Ap  |

## ALIGNMENTS

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Sequence 2749, Application US/11072512
Publication No. US20060029945A1
GENERAL INFORMATION:
APPLICANT: ISOGAI, TAKAO
APPLICANT: SUGIYAMA, TOMOVASU
APPLICANT: SUGIYAMA, TOMOVASU
APPLICANT: WAKAWATSU, AI
APPLICANT: WAKAWATSU, AI
APPLICANT: SATO, HIROYUKI
APPLICANT: ISHIZ SHIZUKO
APPLICANT: YAMAWOTO, JUN-ICHI
APPLICANT: YAMAWOTO, JUN-ICHI
APPLICANT: YAMAWOTO, JUN-ICHI
APPLICANT: OTSUKA, KAORU
APPLICANT: OTSUKA, KAORU
APPLICANT: NAGAI, KEIICHI
APPLICANT: NAGAI, KEIICHI
APPLICANT: IRIE, RYOTARO
APPLICANT: IRIE, RYOTARO
APPLICANT: IRIE, RYOTARO
APPLICANT: IRIE, RYOTARO
APPLICANT: IRIE, RYOTARO
APPLICANT: IRIE, RYOTARO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 5634, Application US/11087099
Publication No. US20060041961A1
GENERAL INFORMATION:
APPLICANT: Abad, Mark S. et al.
TITLE OF INVENTION: Genes and Uses for Plant Improvement
FILE REFERENCE: 38-21 (53450) B EP
CURRENT APPLICATION NUMBER: US/11/087,099
CURRENT FILING DATE: 2005-03-22
NUMBER OF SEQ ID NOS: 12464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQ ID NO 5634
LENGTH: 520
TYPB: PRT
ORGANISM: Agrobacterium tumefaciens str. C58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   66 RNAVLHPFTQLKDFASGKLGE----PTIVETGKGIRIQD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62 GRTARVPGDEITSTVSGWLSELGTQSPLADELARAVRIGD 101
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SUGIYAMA, TOMOYASU
OTSUKI, TETSUJI
WAKAMATSU, AI
SATO, HIROYUKI
ISHII, SHIZUKO
YAMAMOTO, JUN-ICHI
ISONO, YUUKO
HIO, YURI
OTSUKA, KAORU
NAGAI, KEIICHI
IRIE, RYOTARO
TAMECHIKA, ICHIRO
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12.6%;
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SEKI, NAOHIKO

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US-10-509-464-5
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                   RESULT 4
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US-10-467-657-2722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-467-657-2722
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                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/10/467,657
CURRENT FILING DATE: 2003-08-11
PRIOR APPLICATION NUMBER: GB-0103424.8
PRIOR FILING DATE: 2001-02-12
NUMBER OF SEQ ID NOS: 9218
SOFTWARE: SeqWin99, version 1.04
SEQ ID NO 2722
FENCENTIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 2749
LENGTH: 449
TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2722, Application US/10467657 Publication No. US20050260581A1
                                                                                                                                                                                                                                                             Matches
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Best Local S
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: FONTANA Maria Rita
APPLICANT: PIZZA Mariagrazia
APPLICANT: MASIGNANI Vega
APPLICANT: MASIGNANI Vega
APPLICANT: MONACI Elisabetta
TITLE OF INVENTION: GONOCOCCAL PROTEINS AND NUCLEIC ACIDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/11/072,512
CURRENT FILING DATE: 2005-03-07
PRIOR APPLICATION NUMBER: US 60/350,978
PRIOR FILING DATE: 2002-01-25
PRIOR APPLICATION NUMBER: JP 2001-379298
PRIOR FILING DATE: 2001-11-05
NUMBER OF SEQ ID NOS: 4096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILE REFERENCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: CHIRON SPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: NAGAHARI, KENJI
APPLICANT: MASUHO, YASUHIKO
TITLE OF INVENTION: Novel full length cDNA
FILE REFERENCE: 084335-0191
                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 759
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      305
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                                                                                    369 CAGCLYEGKRQTAVRGQWAASVLSLVLLGYLFASLPLVSPLVNAVSI 415
                                                                                                                            55
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                                                                                                                                                                                                                                                          27;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VQVA 308
                                                                                                                            VTDRSHDG-RTARVPGDEITSTVS-GWLSELGTQSPLADELARAVRI 99
                                                                                                                                                                      PTQRSVLMLAAFAWAWRRGRLSAWATWWQALAAVLLFDPLAVLGVGTWLSFGLVAALIWA 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VEIA 117
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OTSUKA, MOTOYUKI
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                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                 gonorrhoeae
                                                                                                                                                                                                                                                                            11.2%; Score 71.5; DB 6; Length 759; 25.2%; Pred. No. 5.2;
                                                                                                                                                                                                                                                          14;
                                                                                                                                                                                                                                                          Mismatches
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; TYPE: PRT
; ORGANISM: Cryptococcus curvatus
US-11-146-428-47
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US-11-146-428-47
(S-quence 47, Application US/11146428
; Publication No. US20060051847A1
; GENERAL INFORMATION:
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CURRENT APPLICATION NUMBER: US/10/509,464
CURRENT FILING DATE: 2004-09-27
PRIOR APPLICATION NUMBER: PCT/EP03/03277
PRIOR FILING DATE: 2003-03-28
PRIOR PPLICATION NUMBER: EP 02 008 650.0
PRIOR PILING DATE: 2002-04-17
NUMBER OF SEQ ID NOS: 12
                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: PatentIn Ver. 3.3 SEQ ID NO 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 10.9%;
Best Local Similarity 27.8%;
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APPLICANT: NIEHRS, CHRISTOF
APPLICANT: MAO, BINGYU
TITLE OF INVENTION: COMPOSITIONS FOR DIAGNOSIS AND THERAPY OF DISEASES
TITLE OF INVENTION: ASSOCIATED WITH ABERRANT EXPRESSION OF KREMEN AND/OR
TITLE OF INVENTION: WIT
                                                                                                                                                                                 Matches
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                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: FORSTER, JOCHEN
APPLICANT: NEILSEN, JENS BREDAL
APPLICANT: NEILSEN, JENS BREDAL
TITLE OF INVENTION: METABOLICALLY ENGINEERED CELLS FOR THE
TITLE OF INVENTION: PRODUCTION OF POLYUNSATURATED FATTY ACIDS
FILE REFERENCE: 671306-2001.1
CURRENT APPLICATION NUMBER: US/11/146,428
CURRENT FILING DATE: 2005-06-06
PRIOR APPLICATION NUMBER: 60/577,245
PRIOR PILING DATE: 2004-06-04
NUMBER OF SEQ ID NOS: 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: GUNNARSSON, NINA KATARINA
APPLICANT: FORSTER, JOCHEN
APPLICANT: NEILSEN, JENS BREDAL
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ORGANISM: Mus musculus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       419
157 WRISHGRHHAATGHLTRDEV--FVPRTREQLGIQAPKTEEEKKGINVPAWRQA 207
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                                        53 YQVTDRSHDGRTARVPGDEITSTVSGWLSELGTQSPLADELARAVRIGDWPAA 105
                                                                                                                                                                            24;
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                                                                                                                                   AGRCGRIGRWGVHQ--EAMMNLAIW-----HPRKVQSATI------
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SHRVPASGDLRDCRQPGASGDIWTIFYEPSTTISIFKKKLKGQSQQDD 466
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                                                                                        AHTAAKIGLWFTYQVLAGMVGTGIWVIAHECGHQAYSESKTINNAVGWVLHSILLVPYHS 156
                                                                                                                                                                                   Conservative
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                                                                                                                                                                                                      10.8%; Score 68.5;
21.2%; Pred. No. 6;
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                                                                                                                                                                                 16; Mismatches
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Pred. No. 5;
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                                                                                                                                                                                                                              Length 446;
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RESULT 6

US-11-072-512-3814

Sequence 3814, Application US/11072512 Publication No. US20060029945A1

APPLICANT: ISOGAI, TAKAO

INFORMATION:

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PRIOR FILING DATE: 2001-11-05
NUMBER OF SEQ ID NOS: 4096
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 3814
LENGTH: 571
                                                                                                                                                                                                                                                                                                                                   Sequence 745, A Publication No.
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APPLICANT: Wehrman, Tom
APPLICANT: Zhang, Jie
APPLICANT: Zhang, Jie
APPLICANT: Zhou, Ping
APPLICANT: Cao, Yi-Cheng
APPLICANT: Drmanac, Radoje T.
TITLE OF INVENTION: Novel Nucleic Acids and Polypeptides
FILE REFERENCE: 785CIP4CN
CURRENT APPLICATION NUMBER: US/11/000,463
CURRENT FILING DATE: 2004-11-29
PRIOR APPLICATION NUMBER: 10/291,265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: NAGAHARI, KENJI
APPLICANT: MASUHO, YASUHIKO
TITLE OF INVENTION: Novel full length cDNA
FILE REFERENCE: 084335-0191
CURRENT APPLICATION NUMBER: US/11/072,512
CURRENT FILING DATE: 2005-03-07
PRIOR APPLICATION NUMBER: US 60/350,978
PRIOR FILING DATE: 2002-01-25
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APPLICANT: Liu, Chenghua
APPLICANT: Asundi, Vinod
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TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                      85
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29 WGVHQ----BAMMNLAIWHPRKVQSATIYQVTDRSHDGRTARVPGDEITS--TVSGWLSE 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30; Conservative
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SATO, HIROYUKI
ISHII, SHIZUKO
YAMAMOTO, JUN-ICHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                    VGSESKHGEGALDQPQHDVRLEDLGELHRAARSGDVPGV----EHV 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WGGEKRGGAEGSPKLAVYATRKTRS--VRSQEDQWYLG----YPGDQWSSGFSYSWWKNS 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUGIYAMA, 10:-
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NAGAI, KEIICHI
IRIE, RYOTARO
TAMECHIKA, ICHIRO
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Wang, Zhiwei
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YOSHIKAWA, TSUTOMU
OTSUKA, MOTOYUKI
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APPLICANT: Drmanac, Radoje T.
ITITLE OF INVENTION: Novel Nucleic Acids and Polypeptides
FILE REFERENCE: 785CIP4CN
CURRENT APPLICATION NUMBER: US/11/000,463
CURRENT FILING DATE: 2004-11-29
PRIOR APPLICATION NUMBER: 10/291,265
PRIOR FILING DATE: 2002-11-08
PRIOR APPLICATION NUMBER: PCT/US01/02623
PRIOR APPLICATION NUMBER: PCT/US01/02623
PRIOR FILING DATE: 2001-01-25
PRIOR FILING DATE: 2001-08-03
PRIOR FILING DATE: 2001-08-03
PRIOR APPLICATION NUMBER: 09/491,404
PRIOR APPLICATION NUMBER: 09/491,404
PRIOR APPLICATION NUMBER: 09/491,746
PRIOR APPLICATION NUMBER: 09/617,746
PRIOR APPLICATION NUMBER: 09/617,746
PRIOR APPLICATION NUMBER: 09/631,451
PRIOR APPLICATION NUMBER: 09/631,451
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                                     SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 273
LENGTH: 486
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APPLICANT: Tang, Y Tom
APPLICANT: Liu, Chenghua
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SEQ ID NO 745
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                                                                                                          PHIOR FILING DATE: 2000-09-15 NUMBER OF SEQ ID NOS: 944
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PRIOR TILING DATE: 2000-07-17
PRIOR APPLICATION NUMBER: 09/631,451
PRIOR FILING DATE: 2000-08-03
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PRIOR APPLICATION NUMBER: 09/633,870
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PRIOR FILING DATE: 2001-01-25
PRIOR APPLICATION NUMBER: 09/922,279
PRIOR FILING DATE: 2001-08-03
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ORGANISM: Homo sapiens
ORGANISM: Homo sapiens
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Qian, Xiaohong |
Wang, Zhiwei
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Zhang, Jie
Zhou, Ping
Cao, Yi-Cheng
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b. US20050266423A1
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24.4%; Pred. No. 4.
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; TYPE: PRT
; ORGANISM: Oryza sativa
US-11-031-206-72
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NUMBER OF SEQ ID NOS: 208
SOFTWARE: Microsoft Office 97
SEQ ID NO 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Publication No.
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PRIOR
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PRIOR FILING DATE: 1999-05-07
PRIOR APPLICATION NUMBER: 60/133042
PRIOR FILING DATE: 1999-05-07
PRIOR APPLICATION NUMBER: 60/133427
PRIOR FILING DATE: 1999-05-11
PRIOR FILING DATE: 1999-05-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: Nucleic Acid Fragments Encoding Proteins Involved TITLE OF INVENTION: Stress Response FILE REFERENCE: BB1357 US NA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION NUMBER: US/11/031,206
CURRENT FILING DATE: 2005-01-07
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APPLICANT: Miao, Guo-Hua
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                                                                                                                                                                                                                       Match 10.4%; Score 66; DB Local Similarity 24.6%; Pred. No. 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: 60/133438 FILING DATE: 1999-05-11 APPLICATION NUMBER: 60/133436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: 60/133437
FILING DATE: 1999-05-11
APPLICATION NUMBER: 60/133428
FILING DATE: 1999-05-11
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  107 AIGEHLSVEI 116
                                          357 -----QVTILSH-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18 AWAGRCGRIGRWGVHQEAMM-----NLAIWHPRKVQSATIYQVTDRSHDGRTARVPGDEI 72
                                                                                49 SATIYOVTDRSHDGRTARVPGDEITSTVSGWLSELGTQSPLADELARAVRIGDWP--AAY 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 73 TSTVSGW------LSELGTQSP 88
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                                                                                                                                                               6 PRH----SGIRAVG-PYAW-----AGRCGRIGRW---GVHQEAMMNLAI--WHPRKVQ 48
                                                                                                                           PKHLSEVGHGLEDSGKPFLWVVKESEASSRPEVQEWLDEFMARTATRGLVVRGWAP----
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Thorpe, Catherine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Famodu, Omora
Odell, Joan T
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Sakai, Hajime
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Application US/11031206
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                                                                                                                                                                                                          Mismatches
                                            -HAVGGFLTHCGWNS-LLEAIARGVPVATWPHFADQ 397
                                                                                                                                                                                                                                                DB 7; Length 491
                                                                                                                                                                                                        40;
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                                                                                                                                                         APPLICANT: Wood, Clive R.
APPLICANT: Dransfield, Daniel T.
APPLICANT: Pieters, Henk
APPLICANT: Hoet, Rene
APPLICANT: Hoet, Rene
APPLICANT: Hoet, Rene
APPLICANT: Hoet, Simon E.
APPLICANT: Hoton, Simon E.
APPLICANT: Hoton, Simon E.
APPLICANT: HICON, SIMON E.
APPLICANT: HOET, SIMON E.
CURRENT APPLICATION NUMBER: US/11/049,536
CURRENT FILING DATE: 2005-02-02
PRIOR APPLICATION NUMBER: US 10/916,840
PRIOR APPLICATION NUMBER: US 10/916,840
PRIOR APPLICATION NUMBER: US 60/494,713
PRIOR FILING DATE: 2003-08-12
NUMBER OF SEQ ID NOS: 721
NUMBER OF SEQ ID NOS: 721
SOPTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 352
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                                            ; FEATURE:
; OTHER INFORMATION: Antibody
US-11-049-536-352
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US-10-821-234-1283
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SEQ ID NO 1283
LENGTH: 1627
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Publication No. US20050255114A1
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CURRENT APPLICATION NUMBER: US/10/821,234
CURRENT FILING DATE: 2004-04-07
PRIOR APPLICATION NUMBER: US 60/462,047
PRIOR FILING DATE: 2003-04-07
NUMBER OF SEQ ID NOS: 1704
NUMBER OF SEQ ID NOS: 1704
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                        ORGANISM: ARTIFICIAL SEQUENCE
                                                                                                                           LENGTH: 110
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         : | |:|::
398 FLNERLAVDV 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             803 VSTDWDSSGAVNDIKLLAVSGKNISLGPONVFCD-VPLTIRL--WDVGEEVYGIQIYTLD 859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              750 EQPCKSSVRTWSPNSAVNPHTVPPACPE-----PQGCYLELEFLYPLVPESLTIW-VTF 802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   58 RSHDGRTARVPGDEITSTVSGWLSELGTQSPLADELARAVRIGDWPAA-----YAIG 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4 QRPRHSGIR-----AVGPYAWAGRCGRIGRWGVHQEAMMNLAIWHPRKVQSATIYQVTD 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EHLEIDAAM 868
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Tang, Y. Tom
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      10.0%;
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      Score 63.5;
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        Length 110;
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Publication No. US20060048240A1
GENERAL INFORMATION:
APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence-Determined DNA Fragments
TITLE OF INVENTION: Therby
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CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 18440
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Publication No. US20060048240A1
GENERAL INFORMATION:
APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence-Determined DNA Fragments and Corresponding Polypeptides
TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
                                                                                                                                                                                                                                                             SEQ ID NO 18439
LENGTH: 412
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Best Local Similarity
Matches 19; Conserv
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Matches 24; Conser
                                                                                                     Query Match
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                                                                                                                                                                               PEATURE: misc_feature
                                                                                                                                                      LOCATION: (1). (412)
OTHER INFORMATION: Ceres Seq. ID
                                                                                                                                                                                                                       ORGANISM: Zea mays subsp. mays
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NAME/KEY: misc_feature
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TYPE: PRT
ORGANISM: Zea mays subsp.
                                                                                   Local
 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               263 RAAGA---VGRCRR-GRLAVAGGVHQPRLL-LPRWHPRRV 297
                                12 RAVGPYAWAGRCGRIGR----WGVHQEAMMNLAIWHPRKV
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                                                                                     Similarity
 RAAGA---VGRCRR-GRLAVAGGVHQPRLL-LPRWHPRRV 301
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                                                                   Score 63.5; Di
Pred. No. 20;
3; Mismatches
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Pred. No. 20;
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7; Mismatches
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                                                                                                     Length 412;
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US-11-096-568A-18438
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence-Determined DNA Fragments and Corresponding Polypeptides
TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
CURRENT APPLICATION NUMBER: US/11/096,568A
CURRENT FILING DATE: 2005-04-01
NUMBER OF SEQ ID NOS: 34471
SEQ ID NO 24503
LENGTH: 447
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Publication No. US20060048240A1
GENERAL INFORMATION:
APPLICANT: Alexandrov, Nickolai et al.
TITLE OF INVENTION: Sequence-Determined DNA Fragments and Corresponding Polypeptides
TITLE OF INVENTION: Therby
FILE REFERENCE: 2750-1592PUS2
                                                                   Matches
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: misc_feature
LOCATION: (1)..(417)
OTHER INFORMATION: Ceres Seq. ID
                                                                                                                                                                                                                                                                                                        FEATURE:
NAME/KEY: misc_feature
LOCATION: (52)..(52)
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NAME/KEY: misc feature
LOCATION: (1)...(447)
OTHER INFORMATION: Ceres
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                                                                                                                                                                     NAME/KEY: misc_feature LOCATION: (59)..(59)
                                                                                                                                                                                                                      LOCATION: (58)...(58)
OTHER INFORMATION: Xaa is
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ORGANISM: Zea mays subsp.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           272 RAAGA---VGRCRR-GRLAVAGGVHQPRLL-LPRWHPRRV 306
                              11 IRAVGPYAWAGRCGRIGRWGVHQEAMMNLAIWHPRKVQSATIYQVTDRSHDGRTARVPGD 70
                                                                   23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12 RAVGPYAWAGRCGRIGR----WGVHQEAMMNLAIWHPRKV 47
                                                                                   Similarity
LRVVG----WAWTAAAAPEWGVHRRCCRGTPLARPRAATSSL---
                                                                   Conservative
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47.5%;
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Pred. No. 20;
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Pred. No. 22;
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